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*AUTHOR:*

ALEXANDER, SAMUEL

*TITLE:*

SPACE , TIME, AND  
DEITY, THE GIFFORD...

*PLACE:*

LONDON

*DATE:*

1920

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BIBLIOGRAPHIC MICROFORM TARGET

Original Material as Filmed - Existing Bibliographic Record

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AL27

Alexander, Samuel, 1859-1938.

Space, time, and deity, the Gifford lectures at Glasgow,  
1916-1918, by S. Alexander ... London, Macmillan and co.,  
limited, 1920.

2 v. 23 cm.

D110  
AL2

Copy in Philosophy. 1927. 2 v.

~~D110~~  
~~AL271~~

~~Copy in Bernard. 1927. 2 v.~~

1. Space and time. 2. God. 1. Title.

BD632.A4

20-20434

Library of Congress

u52n1

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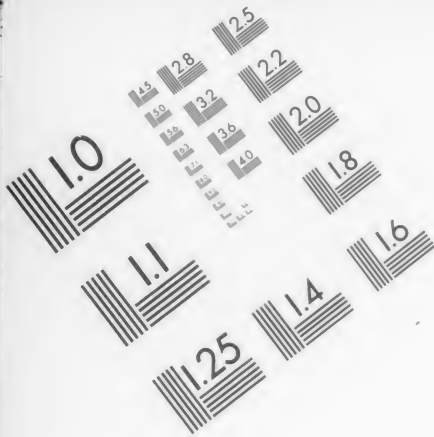
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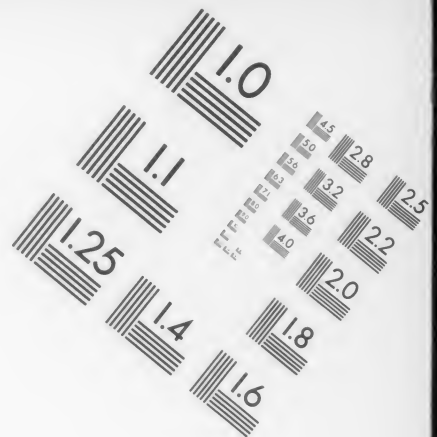
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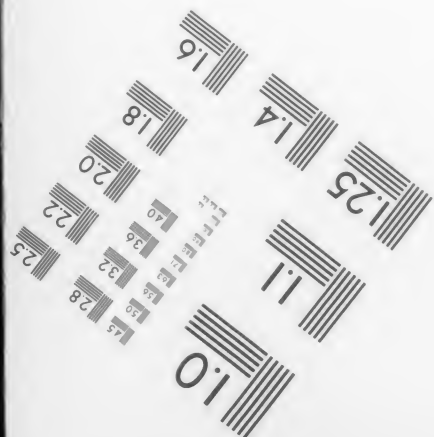
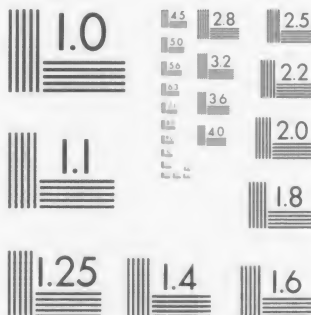
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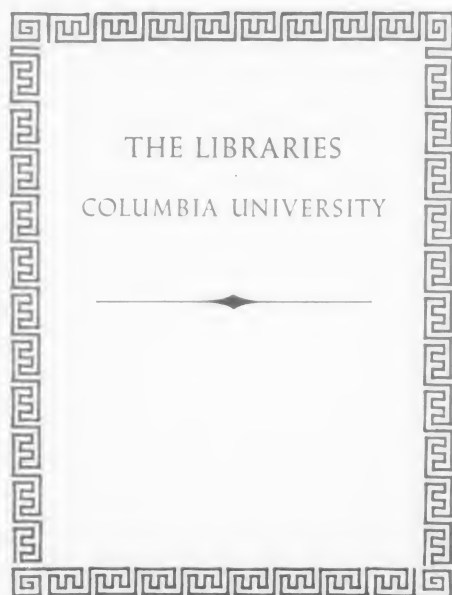


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# SPACE · TIME · AND DEITY

THE GIFFORD LECTURES AT GLASGOW  
1916-1918

BY

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IN TWO VOLUMES  
VOL. I

MACMILLAN AND CO., LIMITED  
ST. MARTIN'S STREET, LONDON  
1920



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The first volume and the first two chapters of the second were in pages before the summer of last year, and accordingly I have made no reference to Mr. A. N. Whitehead's work on *The Principles of Natural Knowledge*, nor to Mr. Einstein's generalised form of the Theory of Relativity (the earlier restricted form I have ventured to refer to) which has lately become generally known in this country through Mr. Eddington and other exponents. The original papers of Mr. Einstein appeared in 1915 and 1916, and I saw the later one, but felt unequal to it

without interpretation. In any case the physical theory is beyond my province, and the metaphysical theory developed in this book, which deals with the same topic but from a different approach, is best left to tell its own tale. But, as Bk. II. ch. iii. contains an apparent contradiction to one part of the new relativity doctrine, I have added a postscript to remove misapprehension, which the reader will find on p. vii.

Some suspicion is entertained of system in philosophy, though I can see no good reason for it. This book is at any rate an attempt at system, but its fault in my own eyes is not that it is systematic, but that it is not systematic enough. Parts of it I may hope to fill out with better knowledge and reflection, in which process I have no doubt that many things in it will need to be revised or abandoned. I am most concerned for the general outline.

Criticism does not occupy a large proportion of the whole, but I have not been able to dispense with it altogether, as I should have preferred. It is, at any rate, not introduced for the sake of criticism, for which I have no taste, but in order to make my own statement clearer. Naturally enough, most of it is directed against those writers from whom I have learned most, and may, I trust, be taken by them as a mark of respect and gratitude. My general obligations will be fairly clear. Apart from these, I have, I hope, indicated where I know myself to have borrowed from others; but there will be many places where I do not know whether I have done so unconsciously or arrived independently at similar conclusions. My work is part of the widely-spread movement towards some form of realism in philosophy, which began in this country with Messrs. Moore and Russell, and in America with the authors of *The New Realism*. It is, I think, matter for congratulation that

there should be such marked differences amongst the independent workers; because there is better hope that something permanent may be reached amongst them.

My warm thanks are due to Mr. J. S. Mackenzie, who undertook the labour of reading the whole of my proofs, and gave me valuable comments; and to my colleague the Rev. S. H. Mellone, who read the book for me in pages. Several other friends have allowed me to consult them on special points, in particular Mr. T. P. Nunn, who did me a great service (not the first he has done me, by his writings or privately) by criticising certain chapters of the book, for which I can hardly thank him enough. I add that neither he nor my other friends are to be held accountable for anything I have written.

S. ALEXANDER.

MANCHESTER,  
February 1920.

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#### POSTSCRIPT (to Book II. chapter iii.)

IN the above chapter I have attempted to refer the category of universality to the empirical uniformity of Space-Time, and have expressed this feature by saying that Space is of constant curvature. This seems at first sight to be directly contradictory to Mr. Einstein's doctrine (in his generalised form of the Theory of Relativity) that Space is warped wherever there is matter, and the more so the nearer to matter, or in other words that Space has a variable curvature. The contradiction is, however, only apparent. When I say that bodies do not change their configuration by displacement in Space-Time, I mean this only so far as Space-Time itself is concerned. On the relativity theory too, Space-Time in which there is no gravitational field is uniform (Euclidean). A body may on the view of the text undergo distortion through its relation to other bodies, as in the familiar instance of the street-urchin who, eager for a cake in a confectioner's

window, finds his nose flattened against the pane. And I assume that the presence of matter in Space-Time is properly represented mathematically by the idea of warping.

On Mr. Einstein's view, as I gather, bare Space-Time is merely a limiting conception, and there is no Space without matter. It is of course of profound importance for philosophy which of the two, material events or Space-Time itself, is regarded as primary. A similar topic has been touched upon in chapter vi. of Book I.

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## INTRODUCTION

THE title of this book names what is simplest in the universe, and what is, for us, most complex in it. A very large part of the book will be occupied with the mind ; but I shall endeavour to exhibit minds in the order of realities which begins with mere events in space and time and ends with God. No explanation is needed for leaving the notion of deity to the end. However immediately we may be aware of God in the religious sentiment, in philosophy there is no short road to deity. But I propose in this introductory chapter to explain the reasons why I begin with Space and Time and not with mind ; and by a preliminary and provisional description of the relation of mind to its objects, to show how an inquiry into this secondary topic leads on to the more fundamental one.

Philosophy, by which I mean metaphysics, differs from the special sciences, not so much in its method as in the nature of the subjects with which it deals. They are of a peculiarly comprehensive kind, and are revealed to the most superficial glance cast at the things or existences in the world. These things fall into groups distinguished from one another by specific characters which some have and others have not. Thus there are material bodies, ranging from ordinary things like stones down to molecules and ions, if these may be called material ; there are living things ; and there are beings with minds. What is the relation of these different orders of existence to one another ? Is there any fundamental nature which they have in common,

of which they are specific examples, and what meaning can we attach to such specification? What is the primary form of being, and how are different orders of being born of it? In the next place, alongside of the diversity of kind amongst things, there are certain pervasive features, which, if they are not found in all things alike, have at least an extraordinary universality of range. Such are the permanence in change by virtue of which things are described as substances, quantity, spatial and temporal character, causality. Individuality is a pervasive character of things, but so also it would seem that there is nothing individual which has not in it a character recognisable by thought, and known as a universal. Metaphysics is thus an attempt to study these very comprehensive topics, to describe the ultimate nature of existence if it has any, and these pervasive characters of things, or categories. If we may neglect too nice particulars of interpretation we may use the definition of Aristotle, the science of being as such and its essential attributes.

But comprehensiveness within its subject-matter is the very essence of every science. What else does a science do but bring system and connection into the haphazard facts which fall within its view, elevating (to use a phrase of Lotze's) coincidences into coherences by the discovery of laws, simplifying under conceptions, unifying what is at first multiplicity? Philosophy does but carry the same enterprise to its furthest limits, and its spirit is one with the spirit of science. Two things attest this community of spirit. The more comprehensive a science becomes the closer it comes to philosophy, so that it may become difficult to say where the science leaves off and philosophy begins. In history the chronicle or newspaper is replaced by the scientific discovery, based in turn on scientific criticism of documents, of the underlying movements in men's minds. When, going a stage further, the science undertakes to exhibit the growth and change of the conception of the State in universal history, as Hegel did, it may claim to be a philosophy of history, not because it is

philosophy but because it is so comprehensive. The highest generalisations in biology, in chemistry and physics are different illustrations of the same thing. Philosophy, if it is well advised, does not count these doctrines as philosophy; it learns from the sciences what is life or matter or mental action, and its problem with regard to them is to ask how these orders of fact are related to one another and to the fundamental nature of things. But it is just because philosophy is concerned, amongst other matters, with these comprehensive ideas that the sciences at their upper limit border on philosophy.

The other witness to the unity of spirit, which makes philosophy only one though the most comprehensive of the sciences, is the historical truth that the special sciences are, at least in our Western world, outgrowths from philosophy. It is the vaguer, simpler, and more comprehensive problems which excite men's minds first, when special knowledge is more limited. Gradually specific bodies of facts are separated from the general body of knowledge which is called philosophy. In our own day we are witnessing the separation of psychology from its parent stem.

Common usage corroborates the description that philosophy like science is the habit of seeing things together. A person is said to take things philosophically who sees and feels things in their proper proportion to one another—a habit of conduct which is not always possessed by the professional philosopher. On a certain occasion Boswell had invited Johnson with some others to supper at his lodgings. But, the landlord having proved disagreeable, Boswell was obliged to change the place of meeting from his house to the Mitre, and waited on Johnson to explain the "serious distress." "Consider, Sir," said Johnson, "how insignificant this will appear a twelvemonth hence."<sup>1</sup> That was a philosophic answer, and Johnson had in practical conduct, though certainly not in specula-

<sup>1</sup> Boswell, *Life of Johnson*, July 6, 1763, vol. i. p. 422 (Oxford, 1887, ed. G. B. Hill).



tion, the philosophic mind. So true it is that, as Plato puts it, the metaphysician is a "synoptical" man.

The  
method of  
philosophy  
empirical.

Since, then, philosophy differs from the sciences nowise in its spirit but only in its boundaries, in dealing with certain comprehensive features of experience which lie outside the purview of the special sciences, its method will be like theirs empirical. It will proceed like them by reflective description and analysis of its special subject-matter. It will like them use hypotheses by which to bring its data into verifiable connection. Its certainty like theirs will extend no further than its efficiency in providing a reasoned exhibition of such system as can be discovered in these data. But the word empirical must not be too closely pressed. It is intended to mean nothing more than the method used in the special sciences. It is a description of method and not of the subject-matter, and is equivalent to experiential. On the contrary, the subject-matter of philosophy is, in a special and more valuable sense of the word, non-empirical. Taking it as self-evident that whatever we know is apprehended in some form of experience, we can distinguish in experienced things, as has been indicated above, the variable from the pervasive characters. I shall call this the distinction of the empirical from the non-empirical or *a priori* or categorial. These *a priori* elements of things are, however, experienced just as much as the empirical ones: all alike are parts of the experienced world. Philosophy may therefore be described as the experiential or empirical study of the non-empirical or *a priori*, and of such questions as arise out of the relation of the empirical to the *a priori*. It is thus itself one of the sciences delimited from the others by its special subject-matter.

Still less do I mean that an empirical philosophy is in some prerogative manner concerned with sense-experience. The senses have no privilege in experience, but that they are the means by which our minds through our bodies are affected by external objects.

Sensations though integral parts of experience are not the only ones. Thoughts are experienced as much as sensations, and are as vital to experience. It may even appear that there are experiences simpler and of a lower order than sensation itself; and it may be possible to indicate the precise relation of these various forms of our experience in the economy of things. A philosophy which pursues an empirical method is not necessarily a sensationalistic one. It deals with the actual world, but the parts of it with which it deals empirically are non-empirical parts of that actual world. The contrast of thought and sense is from this point of view irrelevant.

One of the most important problems, some think the most important problem, of philosophy, the problem of knowledge or of experience itself, is dictated at once by the general nature of the task which philosophy undertakes. The most striking classification of finite things is into minds on the one side and external things on the other. The relation between any member of the one group and those of the other is the relation of cognition or, in general, of experience. Mind knows or experiences; external things are known or experienced. The one is the experiencer, the other the experienced. What is this relation? Is it singular and unlike any other relation between other groups, between, for instance, any two material things, or between a living and a material thing? What is implied in the very fact of experience, in virtue of which we know all that we can know? Some have answered that experience is something unique, and have assigned a privileged position to mind. They have not claimed that privilege in its full extent for the individual minds of you and me, but they have claimed it for mind in some shape or form, whether it be the mind of God, or mind as such, the so-called universal mind. They have been impressed by the inseparability of mind and things within experience. No object, no mind: the mind cannot exercise itself in the void, but only upon some

The  
problem of  
knowledge.

object. That proposition is accepted by all parties. But they have added; no mind, no object: in the absence of mind there would be not only no experience in the sense that there would be no experiencer, but nothing to be experienced. Not all forms of so-called idealism have been so thoroughgoing as the Berkeleyan. Some have been content to insist that what is experienced is dependent on mind and to treat the experienced objects as appearances of an assumed ulterior reality. Even for Kant the world of empirical reality is a world of ideas, unthinkable therefore apart from mind. In this respect, great as was his advance upon his predecessors, he was of their family; and the value of his achievement can only properly be realised when his doctrine has been purged of its disproportionate respect for mind and regenerated by that purgation.

Attitude  
of the  
empirical  
method.

Now the effect of the empirical method in metaphysics is seriously and persistently to treat finite minds as one among the many forms of finite existence, having no privilege above them except such as it derives from its greater perfection of development. Should inquiry prove that the cognitive relation is unique, improbable as such a result might seem, it would have to be accepted faithfully and harmonised with the remainder of the scheme. But *prima facie* there is no warrant for the assumption, still less for the dogma that, because all experience implies a mind, that which is experienced owes its being and its qualities to mind. Minds are but the most gifted members known to us in a democracy of things. In respect of being or reality all existences are on an equal footing. They vary in eminence; as in a democracy, where talent has an open career, the most gifted rise to influence and authority. This attitude of mind imposed by the empirical method is and may rightly be called in philosophy the attitude of realism, if a name which has borne so many meanings may be so used. By whatever name the method may be called, it does not deprive mind of its greatness in questioning its pretensions. Rather it leaves these pretensions to be examined in their place; and there is no rashness in predicting that the real greatness and

value of mind is more likely to be established on a firm and permanent basis by a method which allows to other existences than mind an equally real place in the scheme of being.

It follows that for the empirical method the problem of knowledge, the subject-matter of epistemology, is nothing but a chapter, though an important one, in the wider science of metaphysics, and not its indispensable foundation.

Let me hasten to add that the contrast of the empirical method with the forms of idealism hinted at above is not in all respects, perhaps not in the gravest respects, valid of the form of idealism which, under the usual name of absolute idealism, has been and is so influential on thinking in this country. That doctrine does indeed maintain that reality is experience and penetrated with mind, lives in a medium of mind, and, whatever it is ultimately, is at any rate spirit. But it would accept with qualifications the empirical principle that minds are existences in a world of existences and alongside of them. One of its tenets is in fact that minds are no more ultimately real than material things. In truth the essence of this creed consists not so much in its idealism as in its faith that the truth is the whole, in comparison with which all finites are incomplete and therefore false. With the omission of the concluding phrase, 'and therefore false,' the proposition might be accepted by other doctrines than idealism. At least the grounds of the proposition are quite other than the grounds of ordinary idealism. I have come to believe that the foundation of it as conceived by absolute idealism is erroneous, for reasons which will, I hope, be clear as I proceed. But if I may for a moment touch a personal note I am all the more anxious not to overestimate differences from a school of thought in which I was myself bred, and to whose leaders, Mr. Bradley and Mr. Bosanquet, I owe so much of whatever capacity I may have attained, however unable I may have proved myself to see things with their eyes.

Idealism  
and  
realism.

As to the terms idealism and realism, I should be heartily glad if we might get rid of them altogether:

they have such shifting senses and carry with them so much prejudice. They serve, however, to describe a difference of philosophical method or spirit. If idealism meant only that philosophy is concerned with experience as a whole, it has no exclusive title to be considered the true philosophic method; for all philosophies are concerned with experience as a whole. The real difference between idealism and realism lies in their starting-point or the spirit of their method. For the one, in some form or other, however much disguised, mind is the measure of things and the starting-point of inquiry. The sting of absolute idealism lies in its assertion that the parts of the world are not ultimately real or *true* but only the whole is *true*. For realism, mind has no privileged place except in its perfection. The real issue is between these two spirits of inquiry; and it is in this sense that the following inquiry is realistic. But no sane philosophy has ever been exclusively the one or the other, and where the modern antithesis has hardly arisen, as with Plato, it is extraordinarily difficult to say under which head the philosophy should be classed.

The study  
of mind  
in meta-  
physics.

But though we do not assume in mind any prerogative being or reality which should make other reality in some way dependent for its existence upon mind, it by no means follows that the study of mind may not be of special importance and value for philosophy. The reason is that our minds are so directly open to our own inspection, and we may become by attention so intimate with their working, that what escapes us in the external world may be observed more easily in our own minds. An illustration is found in the notion of causality. After naïvely describing how the behaviour of the sun towards a piece of wax enables us to collect the idea of a power in the sun to melt the wax, Locke says that this power may be most easily discovered in the operations of our wills, or in the power of our mind over its ideas. Locke's instinct guided him right. If you wish to discover the nature of causality, look first to your mind. You are conscious of your own power in willing in so far as you

experience the continuous transition of an idea of some end into the consciousness of taking the final steps to its attainment; for example, are aware that you have dismissed a troublesome imagination, or that an idea of some object to be attained by your action has been replaced continuously by an act which ends in the perception of the end as attained; that experience is the experience of power or activity. You do not, as some suppose (including even Hume in a famous passage which misunderstands the argument), you do not compare your action with a notion of power or activity, and find it to be a case which falls under that designation. It is itself the experience of exerting power. With this analysis in our mind we may ask ourselves whether causality in the physical world is not in turn the continuous transition of one physical event into another. To do so is not to impute minds to physical things, as if the only things which could be active must, on the strength of the experience referred to, be minds. It is merely to verify under obscurer conditions what is manifest in the working of our mind. It is likely therefore that in respect of the other categorial features of things which may be shared by the mind with things, our readiest approach is through the mind, and the help may extend beyond such cases to those questions which arise out of the relations of various grades of existence to one another.

All such inquiry into the operation of mind must be borrowing a page from psychology. But we need not be deterred by the objections of metaphysical purists from gathering material from every relevant source. The problems of metaphysics are anxious enough without allowing ourselves to be disturbed by punctilios.

There are two ways of procedure which seem open to me to pursue. One is that which I have elsewhere followed hitherto,<sup>1</sup> to begin by examining in detail the relation of mind to its objects, always on the empirical

Alternative  
courses.

<sup>1</sup> See various papers in *Proc. Arist. Soc.* N.S. vols. viii. to xi. (1908-11); *Mind*, N.S. vols. xxi.-ii. (1912-13); *Proc. British Academy*, vol. vi. ('The Basis of Realism,' 1914); *Brit. Journ. of Psych.* iv., 1911.

method of analysing that relation in our experience of it ; and to draw from thence what indications are legitimate as to the general nature of things, and of their categorial features. The other way is the one which I propose to follow here : to examine in their order the various categorial features of existence and to exhibit the relation of mind to its objects in its proper place in the system of finite empirical existences. The first way leads ultimately, as will be explained, to this. Only by such an enterprise can the difficulties which present themselves in the problem of knowledge be satisfactorily cleared away.

I propose, however, in the remainder of this introductory chapter briefly to pursue the earlier method and to study the problem of knowledge. I do so partly because it is by that road that I have come myself to consider the larger task, and I cannot help thinking that a man is likely to be more persuasive if he follows the course of his own mental history ; but secondly, and mainly, in order to do something to meet an objection which will inevitably be taken to the other procedure. You are about, it will be said, to examine empirically Space and Time and the various categories of experience. How can you treat these as objects for the mind to examine as it were *ab extra*, when they are unintelligible except in relation to mind ? Has not Kant declared them to be forms of sensibility or understanding, supplied therefore by mind ? Nay, is not your empirical method based upon a sheer mistake ? For in the first place you are treating the objects of experience as if they could be without mind, and yet maintain they are to be open to the mind's inspection. And, as if that were not enough, you are including amongst the things to be examined not merely physical objects but minds themselves. You propose to treat the mind both as an instrument of knowledge and as its object. Before you examine the contents of knowledge you must examine knowing itself.

Now it would be a legitimate reply to these remonstrances, that the existence distinct from mind of the various groups of physical things and the existence of minds as one group among the existences of the world,

as thus postulated by the empirical method, may be taken as a hypothesis for investigating reality. Without troubling our minds as to how things are related to our minds, or how we are ourselves related to our minds, let us make the assumption mentioned and see what comes of it. This is of the essence of the empirical method as a scientific method. You do not raise these questions in science. You assume the existence of life or matter and you ask what it is. Let us in philosophy make the same assumption and see whether in the end we do not get illumination as to our minds and knowledge.

This is all I need, and on which I fall back in the last resort if the hearer remains unconvinced by my version of the fact of experience itself. But in the first place I should wish to incline him from the beginning to the initial soundness of the hypothesis as expressing the nature of our experience. In the next place, it will, I believe, serve us usefully by suggestion, and in particular it will throw light on the sense in which it can be maintained that our mind is an experience for us alongside of the other existences in the world, though it is experienced differently from them.

Any experience whatever may be analysed into two distinct elements and their relation to one another. The two elements which are the terms of the relation are, on the one hand the act of mind or the awareness, and on the other the object of which it is aware<sup>1</sup>; the relation between them is that they are together or compresent in the world which is thus so far experienced. As an example which presents the least difficulty take the perception of a tree or a table. This situation consists of the act of mind which is the perceiving ; the object which is so much of the thing called tree as is perceived, the aspect of it which is peculiar to that perception, let us say the appearance of the tree under these circumstances of the perception ; and the togetherness or compresence

Mind and  
its objects

<sup>1</sup> The distinctness of these two elements was made clear in Mr. G. E. Moore's paper on 'The Refutation of Idealism' in *Mind*, N.S. vol. xii., 1903.



which connects these two distinct existences (the act of mind and the object) into the total situation called the experience. But the two terms are differently experienced. The one is experienced, that is, is present in the experience, as the act of experiencing, the other as that which is experienced. To use Mr. Lloyd Morgan's happy notation, the one is an *-ing*, the other an *-ed*.<sup>1</sup> The act of mind is the experiencing, the appearance, tree, is that upon which it is directed, that of which it is aware. The word 'of' indicates the relation between these two relatively distinct existences. The difference between the two ways in which the terms are experienced is expressed in language by the difference between the cognate and the objective accusative. I am aware of my awareness as I strike a stroke or wave a farewell. My awareness and my being aware of it are identical. I experience the tree as I strike a man or wave a flag.<sup>2</sup> I am my mind and am conscious *of* the object. Consciousness is another general name for acts of mind, which, in their relation to other existences, are said to be conscious of them as objects of consciousness.

'Enjoyed'  
and 'con-  
templated.'

For convenience of description I am accustomed to say the mind enjoys itself and contemplates its objects. The act of mind is an enjoyment; the object is contemplated. If the object is sometimes called a contemplation, that is by the same sort of usage by which 'a perception' is used for a perceived object or percept as well as for an act of perceiving. The contemplation of a contemplated object is, of course, the enjoyment which is together with that object or is aware of it. The choice of the word enjoyment or enjoy must be admitted not to be particularly felicitous. It has to include suffering, or any state or process in so far as the mind lives through it. It is undoubtedly at variance with ordinary usage, in which, though we are said indeed to enjoy peace of

<sup>1</sup> See his *Instinct and Experience* (London, 1912).

<sup>2</sup> The distinction is borrowed from some remarks of Mr. Stout, *Proc. Arist. Soc. N.S.*, vol. ix. p. 243. See also vol. viii. p. 254, where the 'of' in 'aware of myself' is described after him as the 'of' of apposition.

mind, we are also said to enjoy the things we eat, or, in Wordsworth's words, a flower enjoys the air it breathes, where I should be obliged to say with the same personification of the flower that it contemplates the air it breathes, but enjoys the breathing. Still less do I use the word in antithesis to understanding, as in another famous passage of the same poet, "contented if he might enjoy the things which others understand." Both the feeling and the understanding are in my language enjoyed. I should gladly accept a better word if it is offered. What is of importance is the recognition that in any experience the mind enjoys itself and contemplates its object or its object is contemplated, and that these two existences, the act of mind and the object as they are in the experience, are distinct existences united by the relation of compresence. The experience is a piece of the world consisting of these two existences in their togetherness. The one existence, the enjoyed, enjoys itself, or experiences itself as an enjoyment; the other existence, the contemplated, is experienced by the enjoyed. The enjoyed and the contemplated are together.

We have called the two elements united in an experience an act of *mind* and the appearance of a *thing*. In strictness they are but an act or event with a mental character and a non-mental object of just such character as it bears upon its face. But it is hard to speak of the perceived table except as being the thing table as it looks from a particular point of view under particular circumstances; or of the mental act except as an act of the mind.

Acts of  
mind and  
appearances  
of things.

The anticipatory language was justified, for, in fact, no mental act is ever found by itself in the limited and precisely defined form above described; and the like is true of the object. A mental act is only a salient and interesting act which stands out in the whole mental condition. At any one moment a special mental act or state is continuously united with other mental acts or states within the one total or unitary condition; *e.g.* the perceiving of the tree with the sight of adjacent objects,

the sensation of the cold air, the feeling of bodily comfort and the like ; not juxtaposed with them, but all of them merely elements which can be discriminated, according to the trend of interest, within the whole mass. Moreover, not only is the mental act continuous with others at the same moment, but each moment of mind is continuous with preceding, remembered, moments and with expected ones. This continuum of mental acts, continuous at each moment, and continuous from moment to moment, is the mind as we experience it. It is in this sense that we have to describe any limited element of mental action as an act of mind. In the same way the object of the mental act does not exist by itself disconnected from other such objects. It is not relevant for our immediate purpose that a single thing is itself but selected from a vast background. What is relevant is that the limited object is found to cohere with other such objects, and this intimately blended continuum is called the thing, the table or tree, which appears partially on various occasions. Even the single percept of the table or tree betrays this continuity of different separate objects with one another. For a percept is only partially presented in sense. Part of it is suggested by what may loosely be called memory. The tree is only seen from one side by actual sight ; its other side is presented only in idea, in virtue of a past sensory experience of that side.

Thus, immediately, or by a union of many experiences, we are aware not merely of a mental act but of a mind to which that act belongs, which we experience in an enjoyed synthesis of many mental acts, a synthesis we do not create but find. In like manner we become aware of a thing as the synthesis of its appearances to mind on different occasions, where again the synthesis must not be supposed to be made by the mind, but to be in the actual objects themselves ; it is made manifest to us in the tendency of the separate appearances to link themselves together. The ultimate basis of this continuity or synthesis we shall examine in the sequel.<sup>1</sup> Meantime, let us observe that once we have realised this unity of mind or

<sup>1</sup> Bk. III. ch. vii.

of thinghood, we can express the fundamental analysis of experience thus : that in experience things are revealed to mind under various aspects, or in various respects, and that the mind in any experience is compresent with the revelation of the world of things so far forth as it is contained in the experience. The name object may be retained conveniently as a general name for all that is contemplated, whether it be the partial appearance of a thing, or the thing itself.

Always, however, the object is a distinct existence from the mind which contemplates it, and in that sense independent of the mind. At the same time every object implies a selection from the world of being. The selection may be a passive one ; only those features of the world can be revealed to a mind for which the mind possesses the appropriate capacities. The colour-blind man may be unable to distinguish red and green, the tone-deaf man to distinguish a tone from its octave. In part the selection is determined actively by the interests of the mind. In the one case the objects force themselves upon the mind as a bright light upon an open eye. In the other case the chief determinant in the selection is the direction of a man's thoughts or feelings, so that, for instance, he will not hear suspicions of a person whom he loves, and forgets the risk of death in the pursuit of duty. This selectiveness of the mind induces the belief that the objects of mind are made by it, so that they would not be except for the mind. But the inference is erroneous. If I stand in a certain position I see only the corner of the table. It is certainly true that I am responsible for seeing only that corner. Yet the corner of the table belongs to the table. It belongs to me only in virtue of my confining myself to that aspect of the table. The shilling in my pocket owes it to me that it is mine, but not that it is a piece of silver. In the same way it is the engine-maker who combines iron and steel upon a certain plan of selection, but the steam-engine only depends on him for this selection and not for its characters or for its existence as a steam-engine. On

The object  
distinct  
from the  
mind.

the contrary, if he is to use it, he must learn its ways and adapt himself to them for fear of disaster.

Object is, in fact, a question-begging word. It implies a subject. A table cannot be an object to my mind unless there is a mind, to which it is an object. It must be selected for contemplation. It cannot be known without a mind to know. But how much does it owe to that mind? Merely that it is known, but neither its qualities as known nor its existence. We cannot therefore conclude legitimately from the obvious truth that an object would not be perceived without a percipient, that it owes its being and character to that percipient. Berkeley saw the truth that there is no idea to act as middleman between the mind and external things, no veil betwixt the mind and reality. He found the reality therefore in the ideas themselves. The other alternative is not to discard the supposed world of reality behind the ideas but to discard the ideas, regarded as objects dependent on the mind. Either way ideas and reality are one. But for Berkeley reality is ideas. For us ideas are reality. In so far as that reality enters into relation with the mind, it is ideas.

When the prejudice is removed that an object, because it owes its existence as an object to a subject, owes to that subject its qualities of white or green and its existence; the appeal lies from Berkeley to experience itself. So appealed to, my experience declares the distinct existence of the object as something non-mental. I will not yet say physical, for so much is not implied in every experience, for example the experience of universals or of number, but only where the object is physical.<sup>1</sup> But the distinct existence of my object from my mind is attested by experience itself. This is a truth which a man need only open his eyes to see.

The mind  
not a con-  
templated  
object to  
itself.

I do not underestimate the difficulty of that operation. Some of the difficulties of a minor sort will perhaps be met by the exposition itself. But the first condition of

<sup>1</sup> For our apprehension of the minds of others, see later, Bk. III. ch. i. B.

success is to distinguish between the different experiences which the mind has of itself and of the object. Only so can we realise that experience declares mind and things to be fellow members of one world though of unequal rank; and this was the purpose of our reference to knowledge. To be an experiencer of the experienced is the very fact of co-membership in the same world. We miss this truth only because we regard the mind as contemplating itself. If we do so the acts of mind are placed on the level of external things, become ideas of reflection in the phrase of Locke; and thus we think of mind as something over and above the continuum of enjoyments, and invent an entity superior both to things and to passing mental states. Such a mind is never experienced and does not enter, therefore, into the view of an empirical metaphysics. Nor is it of any avail to answer that, although not experienced, it must be postulated to account for certain experiences. The empirical method approves such postulation, which is habitual in science. But the unseen entities, atoms or ions which physics, for instance, postulates, or the molecules of the chemist, are all of them conceived on the analogy of something else which is known to experience. The mind, however, which is postulated in our case, is a mere name for something, we know not what, which claims all the advantages of the mind which we do experience, but accepts none of the restrictions of that mind, the most important of which that it shall not go beyond what is found or suggested by experience. Whatever else the evidence entitles us to say of the mind, its connection with mental acts must be as intimate as the connection of any substance with its functions, and it cannot be such as to allow the mind to look on, as it were, from the outside and contemplate its own passing states.

The possibility of introspection might seem to falsify this statement. It might be thought that in observing our own minds we were turning our mind upon itself and making itself an object of contemplation. But though looking into one's mind is sometimes described, with our

Introspec-  
tion is not  
contempla-  
tion.

objectifying tendency, as looking into one's breast, which is a contemplative act, it is very different. Introspection is in fact merely experiencing our mental state, just as in observation of external things the object is contemplated. The accompanying expression in words is extorted from us, in the one case by the object, in the other case by our own mental condition. Now except in refinement and in purpose there is no difference of kind between the feeling expressed in the ejaculation of disgust and the reflective psychological analysis of that emotion. Replace the interjection Ugh! by a whole apparatus of elaborated speech; instead of the vague experience of disgust let us have the elements of the emotion standing out distinct in enjoyment, and we have the full-blown introspection of disgust. The interest which prompts that subtle enjoyment is a late acquisition, when the natural preoccupation with external things has ceased to monopolise our minds. And it is small wonder that we should regard our introspection as turning our minds into objects, seeing how largely the language which expresses our mental state has been elaborated in pursuit of practical interests and in contact with physical objects.

Introspec-  
tion and  
extrospec-  
tion.

Moreover, we are sometimes victims of a misapprehension as to what it is that we introspect. I am sometimes said to discover by introspection the images that flit before my fancy or the subject of my thoughts. But the landscape I imagine, or Lorenzo's villa on the way down from Fiesole that I remember with the enchanting view of Florence from the loggia, are no more discovered to me by introspection than the rowan tree which I perceive in front of my window as I write. These objects are presented to me by imagination or memory or perception, not by introspection, and are the objects not of introspection but of extrospection, if such a word may be used, all alike. What I introspect is the processes of imagining and thinking or remembering or perceiving. Hence it is that introspection is so difficult to the untrained person to perform with any niceness, unless it is the introspection of some complicated and winding process of mind, as when we describe the growth

of our feelings, as distinguished from the objects to which those feelings relate,<sup>1</sup> or some of the less simple mental processes such as desire where it is easy to note how the mind is tantalised by straining after a fruition which is still denied. In so simple a situation as mere sensation of green introspection can tell us next to nothing about the actual process of sensing, only its vaguely enjoyed 'direction.' The green which is the object sensed, the sensum, is observed by extrospection.

Thus my own mind is never an object to myself in the sense in which the tree or table is. Only, an *-ing* or an enjoyment may exist in my mind either in a blurred or subtly dissected form. When that condition of subtle dissection arises out of set scientific interest, we are said to practise introspection, and the enjoyment is the existence which is introspected. Such introspection displays the complexities of our mind as careful scientific observation of external things displays their complexities and the relations of their parts or features.

If I could make my mind an object as well as the tree, I could not regard my mind, which thus takes in its own acts and things in one view, as something which subsists somehow beside the tree. But since I cannot do so, since my mind minds itself in being aware of the tree, what is this but the fact that there is a mind, whose consciousness is self-consciousness, which is together with the tree? Imagine a being higher than me, something more than mind; let us call him an angel. For him my consciousness would be an object equally with the tree, and he would see my enjoyment compresent with the tree, much in the same way as I may see a tree compresent with the earth. I should be for him an object of angelic contemplation, and he would have no doubt that different

The angel's  
view.

<sup>1</sup> Cp. Browning's:

"Hardly shall I tell my joys and sorrows,  
Hopes and fears, belief and disbelieving:"

these are described introspectively.

"I am mine and yours—the rest be all men's,  
Karshish, Cleon, Norbert, and the fifty."

These are the objects of extrospection.



as are the gifts of minds and trees they are co-ordinate in his contemplated world, as external things are in mine. Now I cannot do as an angel and contemplate myself, in so far as I am mind (for, of course, I contemplate my body). But in recognising that in the cognitive relation to the tree, the tree and I are distinct and relatively independent existences compresent with each other, I am, under the limitations imposed on me, anticipating the angel's 'vision' (I have to use mental terms for what is higher than mental and different from it). Hence I have sometimes allowed myself playfully to speak of what here I call seriously the empirical method in philosophy as the angelic method. What the angel sees as the compresence of two objects I experience as the compresence of an enjoyed mind and a contemplated non-mental object. And if you fail, as many persons appear to fail to whom I have spoken, to find in your experience the act of experiencing the enjoyment, but find only the object and nothing else; for instance, if you find the tree but not the enjoyed perceiving of it; the reason is that you are seeking for the enjoyed as if it were an object contemplated, and naturally can find no perceiving or imagining or thinking which stands to you in the same relation as the tree, no idea of reflection or inner sense comparable with an idea of sensation. All that you then find that can be called your self is your body. On the other hand, seek for the enjoyment as something which you mind or live through, and which you are, and, beginning with acts highest in the scale like willing or desiring, where the enjoyed act is palpable, descend in the scale through constructive imagination to remembering, perceiving, and at last to bare sensing of a sensum, where the enjoying act is least distinct,<sup>1</sup> you will assure yourself of the compresence of the non-mental object with your enjoyed mind.

Experience  
of togeth-  
erness.

But a word is needed to explain what has been omitted till now, how the fact of compresence or togetherness is itself experienced. It means the bare fact, as the angel sees it, that I and the tree are together. That together-

<sup>1</sup> I owe this point to Mr. Laird.

ness is the togetherness of an *-ing* and an *-ed*; and this is for the empirical method the fact of their belonging together in their respective characters in the situation. But since the one term is an enjoyment and the other a contemplation, and the relation relates the terms, how, it may be asked, is the togetherness experienced? Is it an *-ing* or an *-ed*? Now from the angel's point of view I am together with the horse I see and the horse together with me, we are together both. But when we ask how, in the knowing relation, the togetherness is *experienced* we ask the question from the point of view of the being which has the experience, that is, the mind. Thus the mind in enjoying itself enjoys its togetherness with the horse. It does not contemplate the horse's togetherness with itself, the mind. When I say I see a horse, the object is not the horse *as seen* but an object with certain colours and shape. The horse as seen or the seen horse is a description of the horse from the philosopher's point of view in discussing the matter, not from the point of view of the experient himself. What I see is therefore not a horse which I see to be together with me. But in contemplating the horse, I, the experiencer, am experiencing the fact of my togetherness with the horse. The horse's togetherness with me is experienced by me as my togetherness with the horse; which I express by saying I see a horse. If we could suppose the horse to rise to our point of view he would in turn enjoy himself as together with me, that is, with what he apprehends of me; but this would not be the same experience. It would be the horse's experience and not mine. In fact, for me to say that I contemplate the horse as together with my enjoyment is merely a linguistic variation, and consequently a repetition, of the statement that I enjoy myself together with the horse. I neither ought to count the relation twice over nor can I in fact do so. I experience the string which unites us only, as it were, from my own end.<sup>1</sup>

Before proceeding further, let us touch lightly on

Elucida-  
tions.

<sup>1</sup> See, further, *Mind*, N.S. vol. xxi., 1912. 'On relation, and in particular the cognitive relation,' §§ 5, 6, pp. 319-323.

certain points where difficulties are likely to be felt or doubts to be raised.

1. Mind  
and body.

1. When in any cognitive experience the mind or its act is said to be compresent with a distinct and independent object which is non-mental, it will not be supposed that the mind is as it were floated off from connection with the body. Nothing is said as to the body because the body does not as such enter into the experience. It is commonly believed on sufficient grounds that when I see a tree there is excitement of the occipital region of the cerebral cortex. But it is certain that I do not experience this cerebral excitement when I see the tree, and that when I experience the cerebral excitement as such I do not see the tree, but think of the excitement. We are describing experience as we have it by direct knowledge or acquaintance, not importing into it what we may know indirectly or, as it is said, by knowledge 'about' it. There are indeed experiences of the contemplated body which accompany the enjoyment of vision, such as movement of the eyes or their accommodation. These are added experiences and are not part of the experience of seeing the horse, but are experiences of other objects, located in my body.<sup>1</sup>

2. Range  
of objects.

2. The analysis of experience is claimed to be true of any experience. But it is often urged that the distinction of subject and object is a late experience, and is preceded by an experience where the contrast has not yet arisen, an undifferentiated form of "feeling" which is below the level of relational experience. We have, it is admitted, only verifiable approximations to such experiences; if they do exist they would be comparable to a life which was lived within itself, not needing the stimulus of a surrounding world to which it reacts. It may be gravely questioned whether they are rightly described. In some cases the object felt is a mass of bodily states. In other cases, which are more probably the ones hinted at, the apparent absence of an object distinct from the enjoyment arises merely from the vagueness of the object, in which no specific qualities

<sup>1</sup> This subject is discussed in a later chapter, Bk. III. ch. iv. B.

can be detected, no parting of the mass into things with their shapes and colours and smells. Great is the importance in the mental life of the non-mental object which can only be described as 'something or other.'

3. No experience, we have said, ever is isolated or has boundaries which shut it off rigidly from the rest of the world. Rather it is true alike of the enjoyment and of its object that they swim in a surrounding atmosphere or medium. As we turn our eyes, or move our heads, or vary anyhow from one moment to another, the old vague field shifts into a new, and we have the experience of an unending or at least indefinitely shaped and uncircumscribed volume. Every experience has its fringes, or shoots out its corona into some larger whole which encircles it. Some of these surroundings are supplied in memory or imagination, some in present consciousness, and thought with its symbolic process carries us still further beyond. Even the shapes and dates of things are merged into Space and Time as wholes. We have on the side of mind, flashes of light on a dim background of consciousness; and on the object side, more vivid or interesting particulars rising like peaks out of a continuous range of mountainous country. Thus rather than to say we are definite acts of mind which take cognisance of a definite object, it is truer to say that every object we know is a fragment from an infinite whole, and every act of mind is correspondingly a fragment out of a larger though finite mass.

3. Fluidity  
of every  
experience.

4. Experience varies from that of 'something or other' through all the grades of mental life, sensation, perception, imagination, memory, thought. In each case the *-ing* and the *-ed* are distinguishable and the *-ed* is non-mental, and in some cases patently physical. All these mental phases are different forms of attention with its accompanying pleasure or pain. The act is cognitive not because there is any act of cognition distinct from the attention or interest, but because that interest is directed upon a cognised object. In sensation we can distinguish the sensing from its object, the *sensum*, which is external to it. In like manner we have on one side

4. Enjoy-  
ments  
forms of  
attention.

the perceiving, imagining, remembering, and on the other the percept, the image, the memory, the thought, the object in every case being attested by experience itself as a non-mental existence. Many difficulties are thus raised which I dare not here discuss for fear of repetition. They will, I trust, be removed or enlightened when the mind appears in its due place in the order of things. The externality and physical nature of sensations is a particularly disputable matter; for to some they appear to be immediate experiences utterly dependent on mind, though objective in their reference as distinguished from subjective acts like desiring or attention. I will only say that to me every mental act is equally immediate, thinking as much as sensation, and the sensum no less external and non-mental than the thought.

Images not  
mental.

Imagination, however, requires more than a passing mention. It seems in the last degree paradoxical to ascribe to the image of a landscape regained in the memory, and still more of one which has never been seen, an existence, in this case a physical existence, independent of the mind. However objective in character, images appear to be patently psychical, to be mere ideas and in no sense realities. Impressed by the mental character of images, philosophers have construed the rest of experience in their likeness. If an image is the creature of the mind, may not perception be equally so? Error comes in to reinforce this procedure, for an error or an illusion is demonstrated by its discordance with reality to be a mere idea. This way of thinking has led in the past to the doctrine that the objects of our minds are but copies or representations of real things which we therefore do not know directly. When Berkeley reduced all sensible reality to ideas, representationism received its deathblow, but its influence cannot be said to have been eradicated.

The circumstances are altered when instead of beginning our inquiry into knowledge with images, we begin it, as we deliberately did, with perception, where there is less difficulty in believing ourselves directly in

contact with the sensible thing. We can then construe the more difficult cases in the light of perception, passing through the images of memory which are nearer to perception because the memory is of something which was once perceived; thence to an image of an object once experienced but presented again in imagination without the consciousness that it is familiar from the past; and thence to the constructions of fancy. In the memory-image of my friend I have before my mind the revelation of my friend just as much as I have a revelation of him when I see him. The first differs from the second only in the absence of the friend from my organs of sight, in his removal from me in time, and further in that, not being limited and constrained by the presence of the thing to my senses, the subsidiary operations of my mind may introduce into the object features which do not belong to the thing. He is revealed to me through the haze of remoteness in Time and Space, and under the distorting influence of myself adding or subtracting or rearranging. As we pass to constructive imagination the element of personal interference increases. The problems raised by the constructive action of the mind, and, in particular, how in imagination or error we can be in compresence of an object which is a revelation of something in the world of reality, must again be deferred to their place.<sup>1</sup> Meantime let us only observe that no action of the mind is possible without its object any more than a plant can breathe without air. In sensory experience compresence with the physical revelation of a physical thing is brought about through the direct operation of the thing upon the senses. In imaging the act of mind is provoked from within, but in the one case as in the other the act of mind is face to face with its appropriate revelation. The very constitution of a perceived object, as already observed, verifies this description. For it is a commonplace that only part of it is sensed, the rest of the object is supplied by the action of the mind itself.

5. Lastly, the acts of mind are not colourless. They

<sup>1</sup> Bk. III. chs. viii. and ix. B.

5. Mental acts vary with the object.

are different with every variation of the object. They vary according as the object is a sensum, a percept, an image, or a thought. Moreover they vary according to the qualities of the object. It is not the same act of mind which apprehends green as apprehends red, still less as apprehends sweet, and my response to a tree differs from my response to a man. Briefly, as the object varies, however minutely, so does the corresponding enjoyment vary however minutely. But this variation in the mind is not a variation of quality. The mind to experience has only the quality of being mind, that is of being conscious. This proposition is almost the same thing as saying that cognition is being in presence of, in compresence with, the cognitum. The so-called "content" of the mind is the object which is distinct from it, and is revealed to the mind, but in no other sense in the mind. I call the variation of the mind with its object a variation of 'direction,' but must leave the more exact meaning and justification of the description to a later stage.<sup>1</sup>

The cognitive relation not unique.

Let us now return from pursuing these hints which are intended to smooth the way for acceptance of the fundamental proposition to the fundamental proposition itself; and consider what conclusions of a more general metaphysical nature may be drawn from the character of the fact of cognition; and, further, what problems it suggests. There is nothing in the compresence between the mind and its objects to distinguish that relation from the compresence between any two objects which it contemplates, like the tree and the grass. To the supposed superior being or angel this would be obvious. We only conceal it from ourselves, as has been explained, because we fancy that the experient is himself contemplated. When we take the deliverance of experience without prepossessions, we realise that our togetherness with our object and the togetherness of two objects are so far forth as togetherness is concerned identical. The difference between the two situations is, precisely as the angel would recognise, to be found not in the nature of

<sup>1</sup> Bk. III. ch. vi.

the relation, but of the terms related. In the case of two physical objects both terms are physical. In the case of cognition of a physical object, one of the terms, our mind, is a mental or conscious being. When such a conscious being is in a process or act of mind appropriate to a certain object, we are conscious *of* that object. The little word *of* is the symbol of the compresence. So far then as the cognitive relation is concerned, it appears not only not to be unique, but to be the simplest of all relations, the mere togetherness of two terms, their belonging together to a world.

Not only is there a togetherness between the enjoyed and the contemplated, which is the same as that between two objects contemplated, but there is togetherness in enjoyment, as when two acts of mind are distinguished by us as enjoyed, whether at the same time (*e.g.* I see a friend and hear his voice) or in succession. If we indicate objects contemplated by Roman letters, and enjoyments by Greek ones, we have three instances of togetherness which may be indicated thus, AB,  $\alpha A$ , and  $\alpha\beta$ .

At once a problem is raised. The togetherness of physical things is at least, it would seem, a spatial and temporal relation; the things or events belong to one Space and to one Time. (It may be observed in passing that togetherness in time or compresence in it includes both simultaneity and succession.) Do mental acts, then, belong together in Space and Time? and is the mind together with its objects in Space and Time? It would be at once admitted that mental acts are related in time, they are either simultaneous or successive, but it would not universally or even commonly be admitted that they are spread out in space. Further, it is clear that the mental act stands in a temporal relation to its object; whether of simultaneity or succession is not obvious from direct experience. I am aware that my act occurs in time, and the event contemplated also, and the two moments belong at least to one inclusive Time. Does the experience declare that the object and the mind are correspondingly together in Space? The object is

Transition to problems of Space and Time.



contemplated in Space. Even if it is an image, for example of a landscape once seen, not only is it spread out, but also, however vaguely and indefinitely, it is referred to the place to which it belongs in the one Space which we both perceive and imagine.<sup>1</sup> Moreover I seem to enjoy myself as being somewhere in Space, a place which with further experience I assign to somewhere in the region of the contemplated space of my body. Whether these experiences are or are not rightly reported, at any rate the problem of whether mind like physical things is not only in Time but in Space, and of the relation of the space and time contemplated to the time and the problematical space which we enjoy, is pressed upon us for solution.

But the tale of experience is not yet completed. Space and Time are not the only forms of relation or features of things which may make a claim to belong to mind as well as to physical things. All the so-called categories like causality or substance or quantity belong both to the A order and the *a* order, and where that is possible to the order in which an A and an *a* are together. Take, for example, causality, which is contemplated as between events in the physical world. It obtains also as between the mind and some physical objects. When I receive a sensation from an external object, I feel myself passive to that object; I enjoy my sensing as an effect of the sensum, which is its object. This is not a mere postulate made by philosophers for theoretical purposes—that there is an external cause of my perceptions. It is a direct deliverance of experience, and Locke and Berkeley, who insist (particularly Berkeley) on our passivity to sensations in contrast with our activity in imagination, were rendering a fact of experience and not a dogma. I enjoy myself as the effect of an object which acts on my senses, and only in this sense do I contemplate the object as the cause of the effect in me.<sup>2</sup> Moreover, besides causality between

<sup>1</sup> On this last difficult point see later, Bk. I. ch. iii. That the image is spatial in itself is enough for my purposes; it indicates a problem.

<sup>2</sup> See the parallel remarks above on the experience of togetherness (p. 21), and further, *Mind*, N.S. xxi., 1912, 'On relations, etc.,' § 7, pp. 323 ff.

things and me, there is causality between my mental acts or processes; as when the thought of my friend leads me by association to remember a reproof, which in the fashion of friends he administered to me. The causal relation, as we have before observed, is, in fact, more easily noticed and analysed as we experience it in ourselves than as we contemplate it outside us.

What is true of causality is true of other categories. We enjoy ourselves as permanent amid our changes, that is, our mind is in its own enjoyment a substance. It enters into relations within itself as well as with external things. Its processes have at least intensity: they have that species of quantity. Whether it may be qualified by all the categories remains to be seen, and is proposed as a problem. At any rate it would seem that some of them belong both to mind and to things, and that these categories, and, if it is true of all of them, that all the categories, are parts of experience which are features alike of the mental and the physical world. If this is to be regarded as a mere coincidence it is a highly interesting one and would correspond to the superior importance attached in some philosophies to these categories. Is it more than a coincidence, dependent on some deeper reason?

Some, at any rate, of the categories bring us back once more to the earlier problem. Causality is, as physical, a relation which can only be described in terms of Space and Time. What is the connection of this category with Space and Time? Finally, is there any connection between the other categories and Space and Time? We are thus faced again with the duty of investigating these two things (shall I call them entities or forms of relation or features of reality?) as fundamental to any metaphysics.

Thus our analysis of the experience of experience Summary. itself has led us to two results. It has shown us that minds and external things are co-ordinate members of a world, and it has so far justified the empirical method which proceeds on that assumption. In the next place it has suggested, with the help of additional experiences all

intimately connected with that analysis, that Space and Time may be in some peculiar fashion basic to all being. At the same time Space and Time, whatever they may be and whatever may be their relation to one another and to the categories, have been treated as something which can be contemplated and cannot therefore be regarded as dependent on mind, though they may be concerned with the constitution of mind as well as of external things. This is only an extension to them of the empirical method.

I have introduced this long review of mind, which is yet far too short to be convincing, for the reasons which I mentioned before, that it is the natural method of approach and the one I have followed in my own thinking. It may, I trust, have removed any prejudice against the empirical method in metaphysics. If I have failed, I can only beg that my readers will be content to treat the fundamental implications of the method as a hypothesis, a hypothesis of method. That is all that is needed for what is to follow. Let the examination be an empirical examination of the world in its *a priori* features, and without demonstration of the position taken up by any particular form of realism, let us put aside any postulate as to the nature of knowledge, and let the relation of mind to its objects develop if it can in the course of the inquiry. The outline which I have given of the analysis of knowledge will at least have served the purpose of an explanation of certain terms which may be used henceforth without commentary.

The plan I shall follow is this : I shall begin with an inquiry into Space and Time, designed more particularly to exhibit their relation to one another, and after this into the categories. This will occupy the first two Books. In the third Book I shall seek to treat, so far as this falls to the business of philosophy, the various types of existents, so as to bring out their relations to one another within Space and Time. We shall have to ask, for instance, whether the relation of mind to body is unique or not, and in the same way whether its relation to its objects is unique or not, a question already answered provisionally by reference to the fact of experience itself.

Finally, I shall discuss what can be known as to the nature of deity, consistently with the whole scheme of things which we know, and with the sentiment of worship which is directed to God. In attempting this enterprise I can but regret that I am hampered at many points by want of relevant knowledge, especially mathematical and physical knowledge, but it may well be that an outline which is defective in detail may be correct in its general movement. Whether this is so or not I must leave to the result to determine.

BOOK I  
SPACE-TIME

## CHAPTER I

### PHYSICAL SPACE-TIME

IT is not, I believe, too much to say that all the vital problems of philosophy depend for their solution on the solution of the problem what Space and Time<sup>1</sup> are and more particularly how they are related to each other. We are to treat it empirically, describing Space and Time and analysing them and considering their connection, if any, as we do with other realities. We do not ask whether they are real in their own right or not, but assume their reality, and ask of what sort this reality is. Kant believed them to be empirically real but contributed to experience by the mind, unlike the varying qualities of things which were contributed to experience from things in themselves. Other philosophers have turned to the alleged contradictions in Space and Time, and while assigning to them their due reality as appearance have denied that they are ultimately real, and have maintained that the whole or ultimate reality is spaceless and timeless. Events which in our experience appear in time, that is, are laid out in succession, lose that character in the absorbing whole. This depreciation of Time in particular is a widely spread sentiment among thinking men. When the dying Pompilia in Browning's poem wishes to assure her priest-lover of their true union hereafter, she

Extension  
and dura-  
tion.

<sup>1</sup> I use for convenience capital letters for Space and Time when I am speaking of them in general or as wholes. Small letters are used for any portion of them (thus a space means a portion of Space); or in adjectival phrases like 'in space' or 'of time.' The practice is not without its disadvantages, and I am not sure that I have followed it rigorously.



sends him the message, "So let him wait God's instant men call years." In a famous passage Kant, speaking of our need of immortality in order to approximate to perfect virtue in an infinite progress, says, "The infinite being for whom the condition of time does not exist sees what for us is an endless series, as a whole in which conformity with the moral law is attained; and the holiness which his command inexorably requires is present at once in a single intellectual perception on his part of the existence of rational beings." Neither the poet nor the philosopher means merely that what is years to us is a moment to God, in the same way as a moment to a man may be hours to a fly with his microscopic measures of duration. A person might well be content to be an idealist in philosophy in order to have the right of saying these noble things.<sup>1</sup> But all these questions arise not before but after the empirical inquiry into the nature of Space and Time, and this inquiry should answer them directly or indirectly in its course or in its outcome. At the present moment the special question of the exact relation of Time to Space has been forced into the front, because Time has recently come into its full rights, in science through the mathematical physicists, in philosophy also through Prof. Bergson, who finds in Time conceived as *durée*, in distinction from Time as measured by the clock, the animating principle of the universe. Unfortunately his conception of the relation of Space to Time is at once the most important and difficult doctrine of his philosophy and the most obscure. But one welcome consequence of

<sup>1</sup> Even Mr. Russell writes (*Our Knowledge of the External World*, pp. 166-7), "The contention that time is unreal and that the world of sense is illusory must, I think, be regarded as based on fallacious reasoning. Nevertheless, there is some sense—easier to feel than to state—in which time is an unimportant and superficial characteristic of reality. Past and future must be acknowledged to be as real as the present, and a certain emancipation from slavery to time is essential to philosophical thought. The importance of time is rather practical than theoretical, rather in relation to our desires than in relation to truth. . . . Both in thought and in feeling, to realise the unimportance of time is the gate of wisdom." I should say that the importance of any particular time is rather practical than theoretical, and to realise the importance of Time as such is the gate of wisdom.

his work is that it imposes on philosophy the duty of considering, like the mathematicians in their way, what exactly Space and Time are in their relation to one another.

Space and Time as presented in ordinary experience are what are commonly known as extension and duration, entities (let us say provisionally) or forms of existence, in which bodies occupy places, and events occur at times or moments, these events being either external or mental. We shall deal first with physical Space and Time, leaving mental occurrences to a later stage. Now in order to examine empirically what Space and Time are, it is necessary to consider them by themselves, in abstraction from the bodies and events that occupy them, and this offers great difficulty and may seem to some illegitimate. The difficulty is partly derived from our practical habits, for we are not accustomed to think about Space and Time themselves, but about the things contained in them. But it also has a theoretical basis. For we have not any sense-organ for Space or Time; we only apprehend them in and through our sensible apprehension of their filling; by what mode of our apprehension we shall inquire later. I shall call it intuition. It is only by analytic attention that we can think of them for themselves. This leads to two alternative or partially alternative beliefs. Sometimes it is thought that spatiality and temporal character are but properties of sensible things. Extension (to confine ourselves for the moment to this) belongs to colours and touches. In psychology this consideration has brought into authority the doctrine that our sensations, some or all of them, have a certain bigness or extensity just as they have quality or intensity. The other alternative is to declare Space and Time to consist of relations between things or entities, these entities with their qualities coming first, and Space and Time are then respectively the order of coexistence and succession of entities. This is the relational doctrine of Space and Time, and it will come up for discussion in its place, where we shall have to ask how far it is justified and whether relations of space and time (whatever they

Space and  
Time as  
experi-  
enced.

are) are relations as the doctrine suggests between things or events, or relations between places or times themselves.

The relational view of Space and Time.

At first this relational view seems imperative. The ordinary mind, impressed with things and events, naïvely thinks of Space and Time as if they were a sort of receptacle or framework in which things and events are found. The helplessness of such a belief, which makes the connection of things with their space almost accidental, drives us into the relational view. But whatever we may learn later about this relational view, which is of course a legitimate and workable one, it seems clearly not to represent our direct experience of Space or Time. For bodies are not only in relations of space to one another, but they themselves occupy spaces and have shapes; and though we may regard these in turn as relations between the parts of the bodies, this is surely a theory about them and not a description of what the shapes of things look and feel like. They look and feel like extensions. But in fact the relational view is not the only permissible hypothesis. Another hypothesis as to the connection between things or events and the Space and Time they occupy places in is that Space and Time are not merely the order of their coexistence or succession, but are, as it were, the stuff or matrix (or matrices) out of which things or events are made, the medium in which they are precipitated and crystallised; that the finites are in some sense complexes of space and time. In the language familiar from the seventeenth-century philosophy, things and events are 'modes' of these 'substances,' extension and duration. In the same way instead of supposing that extension is a partial character of a colour or a touch, we may suppose colour to be a character of the extension, that what we see is not extended colour but coloured extension. We may even think it possible, as has already been suggested, that although we on our level of existence can see extension only through colour, extension itself may be an 'experience' on a lower stage of finite existence. A world is capable of contemplation by us (though only through our thinking or analytical attention, and though we can only apprehend Space and

Time through the special senses), which is anterior to qualities and contains nothing else but Space and Time.

These, however, are speculations for the future. But enough is said to show that to consider Space and Time by themselves, abstract and difficult as it is, is not an illegitimate abstraction, but is in fact nothing but the consideration of things and events in their simplest and most elementary character. The reproaches which have been urged against Kant because he said that you may think away material bodies in Space but you cannot think away Space have no justification.<sup>1</sup> Difficult indeed the process is, and in practice I am accustomed in thinking of Space and Time by themselves to keep constantly pictures of material things and events before my mind and then forget their richness of colours and smells and other qualities; and I recommend this practice to my readers.

Physical extension then is presented to us in experience as something within which bodies are placed and move, which contains distinguishable parts but is continuous, so that the parts are not presented as having a separate existence, and which is infinite. Ultimately when we introduce intellectual construction we may distinguish points within Space which again are not independent but continuous. The parts of Space are experienced as co-existent. In like manner Time or duration is experienced as a duration of the successive; it is continuous, so that its distinguishable parts are not isolated but connected; in

The empirical characters of Space and Time.

<sup>1</sup> These reproaches suggest a reflection. An eminent philosopher, Kant, declares that things in space can be thought away but Space cannot, and at the same time regards this Space as a 'form' of intuition (*Anschauung*). Another eminent philosopher, Mr. Bradley, declares that without secondary qualities extension is not conceivable (*Appearance and Reality*, p. 16). The conclusion is that the truth of the matter cannot depend on whether this or that person finds himself in possession of a gift denied to others, but upon the facts of experience. If Kant had maintained pure Space to be conceivable by some kind of apprehension and had not asserted it to be a subjective form, and if Mr. Bradley had not denied it altogether to be conceivable in its own right, both of them would have been in fact right. But the decision is a matter of fact and can only be made by examination of the facts conducted with the help of hypothesis.

the end it may be distinguished into moments or instants with the help of intellectual construction, and its parts are successive, and, like Space, it is infinite.

The continuity and infinitude of Space and Time thus spoken of as presented in experience are crude, original characters<sup>1</sup> of them. They do not in themselves imply, though still less do they deny, a theory of the nature of a continuum or an infinite, such as is current in the mathematics of the day. There is something in Space and Time of the nature of uninterruptedness which can be described by no other word than continuity; and something which is described by the word infinity. Mathematical theories of them are arrived at in the effort to render these crude characters into terms of thought, and they come to crown a precedent reflection which is already contained in ordinary experience of Space and Time.

Spaces and times are apprehended in the first instance just as other things are, if not by sense, at any rate through sense. But sense carries us but a little way in this experience. Only finite spaces and times are presented through sense. But even so our senses give us such evidence as they can of these original characters. For no finite space or time is experienced without a surrounding space or time into which it sensibly flows. And every finite time or space is sensibly continuous or uninterrupted; it is not an aggregate of parts, but something in which parts can be distinguished as fragments of the whole.

Our further ordinary experience of Space and Time involves the recognition of elements given to us in thought. When we proceed to speak of Space and Time as continuous wholes and distinguishable into points or instants, we are going beyond what we learn through sense and employing ideas, or what are sometimes called intellectual constructions, and are employing also thoughts in the special and proper sense of concepts. Nor is there any reason, supposing the ideas to be well chosen, why we should not do so. For the simplest objects of experience are full of our ideas. A thing of a certain sensible colour

<sup>1</sup> A remark to much this effect which I heard in a discussion induces me to make this explicit statement by way of clearness.

and shape is seen as a man. Half the object is ideal, due to our interpretation of what we see. What we perceive is the object which we sense as supplemented by what we image or think. Space and Time are only in the like case with other experienced things, and to apprehend them we need to use imagination and conception. I can see and touch only limited spaces. But I discover that one space is continuous with another, or is included within a larger space, and I can think of a very large space, such as a country two hundred miles square, partly by imagination but largely by conceptions founded on experience of the plan of construction of one space out of smaller ones, and on exact measures of length. We take a sensible space and elaborate and extend it by ideas and concepts. It is still plainer that infinite Space is apprehensible only with the help of thought. Similarly there are no perceptible points or instants, but only durations and extents. But we discover in experience that an extent or a duration admits division continually. Space and Time are so constituted. Accordingly we can construct the idea of a point or instant in a way the reverse of that by which we construct an infinite Space or Time. We start with a finite extent or duration, we imagine it divided, and then we interpret this imagination by the concept that there is no end to the division. A point is thus something which, founded on apprehended reality, is constructed by an act of analytical imagination, which involves also besides the image or idea of a point, the concept of point as the element out of an infinitude of which an extent is made. Such an intellectual construction, or construct, is legitimate, provided at least we make no assumption that the point or the instant can be isolated from other points or instants. By using the constructive idea of point or instant we do not falsify the experienced object, Space or Time, but dissect it into its elements, following the plan of its construction. We must not imagine that the elements are unreal because they are ideal constructions, as the word construction is apt to suggest, any more than we must imagine that a man's back is unreal because I do not see it but only imagine it or have it in idea. For sense



has no monopoly of reality. We reach reality by all our powers. All we have to be sure of is that we use them rightly so that the whole, by whatever powers of ours it is apprehended, shall be itself and self-consistent. When we come to the mathematical treatment of Space and Time we shall return to these intellectual constructions.

Infinity  
and con-  
tinuity as  
compre-  
hended.

The infinitude of Space or Time is another of their experienced features and like their continuity is a percept extended by thought. It is indeed the other side of their continuity. It expresses not their uninterruptedness but their single wholeness. And, as with continuity, our thinking discovers but does not make, it only finds, an element in Space which is not discoverable by unaided sense. The sensible or perceptual datum is that each finite space is part of a wider one. The infinite Space is the perceptual datum as qualified by the introduction of this conceptual element. The something or other which we feel to be the larger space of which a finite space is a fragment becomes extended into totality. Thus the infinity of Space does not merely mean that we never can reach the end of it however far we go, though it implies that as a consequence. That would be to describe Space in terms of our infirmity. But we are not concerned with our ways of thinking Space but with Space itself. The infinite Space is thus the positive object of which the finitude of any given portion, apprehended as finite, is the limitation. Infinite Space is positive; finite space is negative. The infinite is not what is not finite, but the finite is what is not infinite. In this sense Space (or Time) is presented as an infinite thing which is prior to every finite piece of it. "How can finite grasp infinity?" asks Dryden. He had already been answered by Descartes that however difficult to comprehend, the Infinite is known or apprehended directly and before the finite things which are easier to *comprehend*. It is thus that infinite Space is given to us in experience.

To *comprehend* it, reflective (mathematical or philosophical) thought is needed which does not merely embody a formulation of the surface aspect of space- or

time-experience, (for that is all the thought that is needed to be aware of infinite Space, so patently is its infinitude displayed), but analyses and probes. What philosophers have adumbrated in this regard, the mathematicians have made luminously clear. Space is infinite because it is self-contained. Choose any selection of its parts according to some law of selection and you find that that selection is itself infinite and contained within the original. It is thus that the sphere or the circle have been used as symbols of a totality because they return with revolution into themselves. An infinite class is defined by mathematicians as one to which a class can be found corresponding, one to one, to the original class and yet a part only of the original class. The series of integral numbers is infinite, not because it has no end,—a mere mental or subjective criterion,—but for that reason. Double, for instance, all the numbers of the series 1, 2, 3, etc. The series 2, 4, 6, etc., corresponds to the whole series one to one, but falls wholly within it as a part of it. In this case on account of the infinity of the derived series we cannot say that the whole is greater than its part. Whereas if we take a finite series, 1, 2, 3, 4, the doubles of these numbers fall some of them outside the original series, and there is no operation we can perform on them which will yield a different result. Space and Time are infinite in this comprehensible and again perfectly empirical sense.

In like manner, reflective thought attempts to comprehend the given apprehended feature of continuity of Space or Time (or any other continuum). But for convenience I defer the few remarks I can make upon this difficult matter to a later page.<sup>1</sup> It is enough to say that, in a continuum, between any two members another can be found.

Space and Time then are presented to us as infinite and continuous wholes of parts. I shall call these parts points and instants, availing myself of the conceptual description of them, and meaning by their connectedness or continuity at any rate that between any two points or

<sup>1</sup> Ch. v. p. 147.

instants another can be found. To me, subject to what may be said hereafter, this is a way of saying that the points and instants are not isolated. But if any reader jibs, let him substitute lengths and durations; he will find that nothing is said in what follows except what follows equally from the notion of parts.

The interdependence of Space and Time.  
(1) Time and Space.

Other features will declare themselves as we proceed, some obvious, some less so. But they will be found to require for their understanding the understanding of how Space and Time are related to each other. These are often thought, perhaps commonly, to be independent and separate (whether treated as entities as here or as systems of relations). But a little reflective consideration is sufficient to show that they are interdependent, so that there neither is Space without Time nor Time without Space; any more than life exists without a body or a body which can function as a living body exists without life; that Space is in its very nature temporal and Time spatial. The most important requirement for this analysis is to realise vividly the nature of Time as empirically given as a succession within duration. We are, as it were, to think ourselves into Time. I call this taking Time seriously. Our guides of the seventeenth century desert us here. Besides the infinite, two things entranced their intellects. One was Space or extension; the other was Mind. But entranced by mind or thought, they neglected Time. Perhaps it is Mr. Bergson in our day who has been the first philosopher to take Time seriously.

Empirically Time is a continuous duration, but it is also empirically successive. Physical Time is a succession from earlier to later. As Mr. Russell points out,<sup>1</sup> the succession from past through present to future belongs properly to mental or psychological time. But so long as we take care to introduce no illegitimate assumption we may conveniently speak of past, present, and future in physical Time itself, the present being a moment of physical Time fixed by relation to an observing mind and

<sup>1</sup> *The Monist*, vol. xxv., 1915, 'On the Experience of Time,' pp. 225 ff.

forming the boundary or section or cut between earlier and later, which then may be called past and future. In a manner, earlier and later are, as it were, the past and future of physical Time itself. I shall therefore use liberty of phrase in this matter. Now if Time existed in complete independence and of its own right there could be no continuity in it. For the essence of Time in its purely temporal character is that the past or the earlier is over before the later or present. The past instant is no longer present, but is dead and gone. Time's successive-ness is that which is characteristic of it as empirically experienced, in distinction, say, from Space, which also is continuous. This is the plain conclusion from taking Time seriously as a succession. If it were nothing more than bare Time it would consist of perishing instants. Instead of a continuous Time, there would be nothing more than an instant, a now, which was perpetually being renewed. But Time would then be for itself and for an observer a mere now, and would contain neither earlier nor later. And thus in virtue of its successive-ness it would not only not be continuous but would cease even to be for itself successive. If we could suppose an observer and events occurring in time, that observer could distinguish the two 'nows' by the different qualities of the events occurring in them. But not even he could be aware that the two 'nows' were continuous, not even with the help of memory. For memory cannot tell us that events were connected which have never been together.

Descartes did, in fact, declare the world to be perpetually re-created. For him the idea of a Creator presented no problem or difficulty, and with his imperfect grasp of the real nature of Time the step he took was inevitable and imperative. For us the case is not the same, even if re-creation at each moment by a Creator left no difficulty unsolved. But in any case the universe at the stage of simplicity represented by mere Time and Space has no place for so complex an idea as creation, still less for that of a supreme Creator. Time and Space are on our hypothesis the simplest characters of the world, and the idea of a Creator lies miles in front.

Thus the mere temporality of Time, its successive-ness, leaves no place for its continuity or togetherness and seems to be contradictory to its continuity. Yet the two are found together in Time as we experience it. If, therefore, the past instant is not to be lost as it otherwise would be, or rather since this is not the case in fact, there needs must be some continuum other than Time which can secure and sustain the togetherness of past and present, of earlier and later. ('Togetherness' here is used obviously to mean merely connection and not as in ordinary usage contemporaneity.) This other form of being is Space; that is, Space supplies us with the second continuum needed to save Time from being a mere 'now.'

The same conclusion follows if, for instants, we substitute durations. The earlier duration, if Time stood by itself, would not be continuous with the later. We should but have a duration, a particle of time, perpetually re-created. There would then, moreover, be the additional problem of how a particle of duration could be temporal if it did not itself exhibit differences of before and after.

It was not open to us to say that since the successive-ness of Time and its continuity are contradictory Time is therefore not real but only appearance. Time is an object given to us empirically. We had thus to ask whether this Time is independent of Space, as it appeared to be. With the necessity of Space to the existence of Time the contradiction is removed. It may, in fact, be suggested that the reason why Time and Space are believed to be contradictory in themselves is that the Time and Space in question are not really Time or Space, as they are experienced. Time is considered apart from Space and Space from Time.

The only other way of evading the force of this analysis of facts is on the relational view of Time where an instant is defined by events in relation. But this method is contrary to our hypothesis, and it would be out of place to consider the alternative here.

One word to anticipate misunderstanding. I said that to supply continuity to the successive there must

be a non-successive continuum, simulating by the word 'must' the deductive form. But I am making no attempt to prove the existence of Space. There is no room for 'must' in philosophy or in science, but only for facts and the implications of them. I might have said simply the continuity is, as a matter of fact, supplied by the connection of Time with the other continuum Space. The apparent 'demonstration' was a piece of analysis of an entity given in experience.

But if Time cannot be what it is without indissoluble relation to Space, neither can Space be except through indissoluble connection with Time. For Space taken by itself in its distinctive character of a whole of co-existence has no distinction of parts. As Time in so far as it was temporal became a mere 'now,' so Space so far as merely spatial becomes a blank. It would be without distinguishable elements. But a continuum without elements is not a continuum at all. If Space were without elements it would be open to the difficulties urged with so much force against Spinoza's conception of the infinite Substance or of its attributes: that it swallowed or absorbed everything which might be said to be contained in it, but left no means for the existence within it of the multiplicity of things or indeed of anything. Thus the empirical continuity or totalness of Space turns out to be incompatible with the other empirical feature of Space, that it contains distinctness of parts. That distinctness is not supplied by the characteristic altogether of Space. There must therefore be some form of existence, some entity not itself spatial which distinguishes and separates the parts of Space. This other form of existence is Time. Or in order once more to avoid the appearance of an attempt to demonstrate the reasons for the universe, let us say that Time is discovered to supply the element in Space without which Space would be a blank.

Thus Space and Time depend each upon the other, but for different reasons. But in each case the ultimate reason of the presence of the other is found in the continuity which in fact belongs to each of them as we



find them in fact. Without Space there would be no connection in Time. Without Time there would be no points to connect. It is the two different aspects of continuity which compel us in turn to see that each of the two, Space and Time, is vital to the existence of the other.

It follows that there is no instant of time without a position in space and no point of space without an instant of time. I shall say that a point *occurs* at an instant and that an instant *occupies* a point. There are no such things as points or instants by themselves. There are only point-instants or *pure events*.<sup>1</sup> In like manner there is no mere Space or mere Time but only Space-Time or Time-Space. Space and Time by themselves are abstractions from Space-Time, and if they are taken to exist in their own right without the tacit assumption of the other they are illegitimate abstractions of the sort which Berkeley censured. How they come to be distinguished apart from one another and on what terms this is legitimate and useful will appear in due course. But at least they are not merely two concurrent though correlated continua. The real existence is Space-Time, the continuum of point-instants or pure events.

Repetition  
in Space  
and Time.

The characters which Space and Time present to experience and the relation of the one to the other as founded on those characters are not exhausted by the simple statement that each is necessary to the existence of the other. So far as the exposition has gone, their correspondence might be a one to one correspondence, to each instant a point. As a matter of fact it is a one-many correspondence. One instant may and does occupy several points, that is, Time is repeated in Space. In the more familiar but less elementary and more complex language of our experience of things and events with their qualities, several such physical events may occur in different places at the same time. Again Space is repeated in Time; one point may and does occur

<sup>1</sup> I speak of pure events in distinction from events with qualities or 'qualified' events, e.g. a flash of red colour.

at more than one instant; or to revert to the familiar language of unspeculative experience, several events at different times may occupy the same place. Time, as it were, returns to its old place at a later instant. These mere empirical facts are sufficient to show that the correspondence of point to instant is not one to one. Now it may be seen that our previous statement of the relation of Space and Time was defective, and besides not making provision for the repetition of Space in Time and Time in Space, would be insufficient even to account fully for the continuity of either Space or Time, either an extended continuum or a successive one.

If the correspondence were unique, neither would Space be able to perform its office of saving the instant from perishing, nor Time its office of saving Space from blankness. For each would in that case be "infected," if I may borrow from Mr. Bradley a picturesque habit of speech, with the character of the other. Consider Time first. If the point corresponded uniquely to the instant it would share the character of the instant, and Space would cease to be the Space we know. The point would lack that element of permanence, that is, independence of its particular instant, in virtue of which it can as it were detain the instant and save it from perishing utterly and being a mere 'now' without connection with other instants. But the repetition of a point at many instants, its recurrence, secures to the point this capacity; or if the more demonstrative form of words be preferred, in order that Time should linger Space must recur, a point must be repeated in more than one instant. All that our previous analysis effected was to show that a continuous succession depended on something different in itself from a succession. But just because of its intimacy of relation to Time, this something different must be something more than merely different from Time, and that more which it has is what I shall call, for reasons to be made clearer hereafter, the intrinsic repetition of a point in several instants.

Similarly, if there were unique correspondence, Time would share the character of Space, be infected with

bare blank extendedness, would in fact be mere extension and cease to be the Time we know, which is duration in succession. In order that it should be in its own nature successive and so be able to discriminate points in Space, the instant of Time must be repeated in or occupy more points than one; that is to say, the occupation by an instant of several points gives 'structure' to the instant, and thereby enables it to distinguish one point of space from another.<sup>1</sup>

This abstract or elementary relation of Space and Time lies, it will be seen, at the bottom of our experience of empirical substances. They possess temporal permanence and spatial structure: the parts of a substance are always changing. There would be no substance were it not that at any instant of its life several parts were of the same age, and each part of its space could be occupied by different moments of time. If the substance changed all at once and its parts were not repeated in time, or if none of its parts occurred together at the same instant it would not be a substance. What I have done above is to exhibit these same relations in respect of any part of Space and Time themselves. Later on we shall realise the importance of this analysis of permanent structure in things, when we come to speak of categories, a topic which I must not here anticipate.

The three dimensions of Space, and the characters of one-dimensional Time.

The relation of Space and Time is, however, still more intimate. So far as we have gone Space might be one-dimensional like Time, but physical Space as presented in experience has three dimensions. Time also, besides being a one-dimensional continuum of duration in succession,<sup>2</sup> has two other features as experienced. It is irreversible in direction, that is, an instant which is before another cannot be after it. In technical phrase the relation of instants is

<sup>1</sup> Observe that only the point or the instant is repeated. The point-instant is not repeated.

<sup>2</sup> By succession I mean bare succession. In ordinary usage a succession would be understood to include the two other features of irreversible direction and betweenness.

asymmetrical. Secondly, each instant is *between* two instants, before the one and after the other; or, to put the same thing otherwise, the relation of 'before' is transitive, that is, if an instant A is before an instant B, and B before C, A is before C. Now the three dimensions of Space are, considered spatially,<sup>1</sup> independent: position may vary according to each independently of the others. To say that Space is a three-dimensional form of externality is the same thing as to say there are three independent one-dimensional forms of externality. It is not so obvious that the three features of Time, its successive-ness, the irreversibility of the succession of two instants, and the transitivity of 'before,' or 'betweenness,' are independent. The second is clearly enough different from the first, there is nothing in the relation of successive-ness as such which makes it irreversible. But even if Time is irreversible it is not necessarily uniform in its direction. The movement of Time might be pendular, and a movement might be from A to B and from B to C and both irreversible, but that from B to C might be in the opposite direction in spatial representation. It would not in that case necessarily be true that if A is before B and B before C, A is also before C.

C      A      C      B      C.

Any of the three relative positions of C is possible, and it could not be said whether A is before or after C—the relation of A to C is indeterminate. In fact, movement in time might be subject to constant reversals of direction by jumps, and any one interval would be irreversible, but the whole Time not uniform in direction, which is necessary to 'betweenness.'

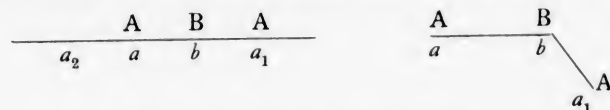
Now the three features enumerated in Space and Time being independent, we might content ourselves with saying that as between spatiality and successive duration there subsists such a connection of interdependence that each new feature in Time is rendered possible by a new dimension of Space and conversely renders it possible. But I do not like to leave the matter in this vague

<sup>1</sup> See note 1 on p. 59 for the reason of this limitation.

condition ; and therefore I shall try to make the connection of Time's properties and the dimensions of Space more explicit ; hazardous as the undertaking is. It is essential to bear in mind the one-dimensionality of Time and the independence of the three dimensions of Space of one another. I shall use capital letters to designate instants and small ones to designate points.

Irreversibility of Time and a second dimension of Space.

Let us begin with the fact of irreversible, that is, determinate, order in time ; we can see then that a one-dimensional Space would not suffice to secure it.  $aA$  and  $bB$  are two point-instants. The points  $a$  and  $b$  which occur at those instants suffice to distinguish the instants as well as making them possible, but not to determine whether  $A$  is prior to  $B$  or posterior. So far as the points are concerned  $A$  might be before or after  $B$  in time. For the instant  $A$  is repeated in space at say the point  $a_1$ , and if there were only one dimension of Space and we take the line  $ab$  as we may to represent the time-dimension as well, there would be nothing to distinguish  $aA$  from  $a_1A$ , which has the same time. But  $a_1$  might be on the other side of  $b$  from  $a$  and thus  $A$  might be either before or after  $B$ .<sup>1</sup> Hence since the order is irreversible it follows that the instant  $A$  cannot be repeated in the one-dimensional line  $ab$ . For it is clear

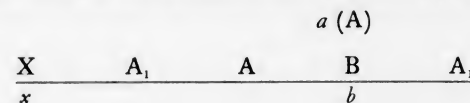


that  $A$  cannot be repeated at two points  $a$  and  $a_2$ , both on the same side of  $b$ , because in that case their dates

<sup>1</sup> I assume the one-dimensional Space to be spatially ordered, as it empirically is (for our inquiry is an empirical analysis). Since order of Space is said later (p. 56) to be due to Time this may seem to be a circular procedure ; but it is not really so. The argument is that, empirical Time being intrinsically repeated in Space, its irreversibility is not secured by a one-dimensional Space, but requires a second dimension. In the end we see that its irreversibility in one-dimensional Space as expressed in the difference of right and left implies a second dimension, and that a one-dimensional Space is in fact an abstraction.

would be different.<sup>1</sup> Now with a second dimension of Space  $A$  can be repeated outside the line  $ab$ , and since this second dimension is independent of the first, the possible contradiction is removed. The point  $a$  is before  $b$  so far as one dimension is concerned, and the point  $a_1$  before  $b$  so far as the other is concerned. The second dimension is accordingly not only necessary but sufficient. Thus if succession is irreversible there needs more than one dimension of Space.

Conversely if Space has two dimensions succession is irreversible. Let  $XB$  now represent the one-dimensional time-line,  $X$  and  $B$  occupying the points  $x$  and  $b$  ; and let  $a$  be a point outside  $xb$  occurring at the instant  $A$ , which is before  $B$ .<sup>2</sup> Now every point is repeated in time and  $a$  therefore occurs at some other instant  $A_1$  which may



be represented on the time-line on either side of  $B$  from  $X$ . But unless the order in time is irreversible there is nothing to distinguish  $A$  from  $A_1$  since they both occupy the same point, though the two point-instants are different.  $A_1$  might be before  $B$  or after it, so far as Space is concerned.

<sup>1</sup> This does but represent the empirical fact that in a motion in one dimension no date recurs on the line. A friend who has favoured me with valuable criticism urges that this assertion is made without sufficient ground. In a purely one-dimensional Space,  $a$  and  $a_2$  might still be on the same side of  $b$  and yet contemporaneous, that is, have the same instant. We might imagine a subsequent movement along  $ab$  which arrived at  $a_2$  at the same moment as the previous movement at  $a$  ; for instance puffs of smoke might be blown along at intervals. But directly we realise the extreme simplicity of the data we are dealing with, we see that such a suggestion implies the ordinary three-dimensional world we are familiar with. We should be thinking in terms of physical things and their movements in Space, not of the pure movements which constitute Space-Time itself. Whereas we are in this inquiry watching in thought the generation of Space in Time, and we cannot go back and think of the world as beginning over again.

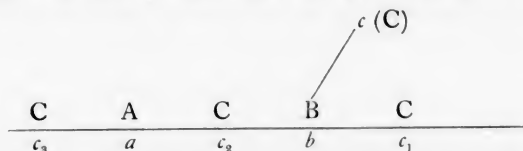
<sup>2</sup> The instant of  $a$  is represented on the time-line  $A$ . I write  $A$  beside  $a$  in the figure, but in brackets, merely to indicate that  $a$  has an instant.

There must be something therefore in Time to distinguish the two-point instants  $aA$  and  $aA_1$ . This is secured by the irreversibility of the time-order.  $A_1$  is after  $B$ , or if before  $B$  at a different date from  $A$ .

Note in passing and by way of introduction to what follows that nothing has been said as to whether  $A$  is or is not before  $A_1$ . All we need is that  $A_1$  if after  $B$  shall not also be before  $B$ , and irreversibility secures this. It is therefore not only necessary for distinguishing  $aA$  from  $aA_1$ , but it is sufficient for the purpose.

Between-  
ness of  
Time and  
a third  
dimension  
of Space.

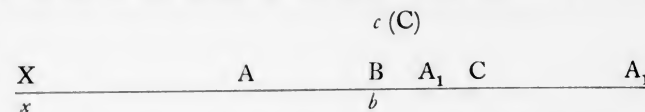
The third correspondence, that of the betweenness of Time to a still further independent dimension of Space, is more difficult to establish. Suppose, in the first place, that succession possesses betweenness or is a transitive relation. Then it may be seen that two dimensions of Space are insufficient. Let there be a movement in such Space from  $a$  to  $b$  and from  $b$  to  $c$ , so that the instant  $A$  of  $a$  is before  $B$  and  $B$  before  $C$ . Since Time is one-dimensional we may represent times, as was done before, on the line  $ab$ ; and on this  $C$  also may be represented. Now the



instant  $C$  of the point  $c$  is repeated in space, and not in the line  $bc$ , and since  $ab$  represents the time-line, we may represent the various repetitions of  $C$  in space by points on the line  $ab$ . But  $C$  is then represented ambiguously by any one of the three points  $c_1$ ,  $c_2$ , or  $c_3$ . For whichever of the points repeats the time  $C$ , the postulate of irreversible succession is satisfied. If  $C$  is at  $c_3$ ,  $A$  is before  $B$ , but  $B$  may still be before  $C$ , for Time may change its direction within the line  $ab$ , but still  $C$  will be after  $B$ . So, for example, there is irreversible succession in the swings of a pendulum, but as represented by the excursion the time changes its direction. There is irreversible order in each of the two times  $AB$ ,  $BC$ ; but there is no betweenness unless  $C$  falls at  $c_1$ . There is thus no guarantee

of betweenness of Time if the repetition of  $C$  be confined to two-dimensional Space. But this is possible if  $C$  be repeated outside the plane  $abc$ . Moreover, since the third dimension is a new dimension and independent of the other two, the necessary condition is also sufficient. For if the relation of  $A$ ,  $B$ , and  $C$  is transitive, we must represent the priority of  $B$  to the instant  $C$  in the new independent dimension by the same spatial convention as we represent priority on the line  $ab$ , that is,  $C$  occupies  $c_1$  and not  $c_2$  or  $c_3$ .

Conversely, if Space is three-dimensional Time is transitive, there is not merely irreversibility of direction in Time but uniformity of direction. Let the line  $XB$  represent the time-line, these being the instants of  $x$  and  $b$ .  $B$  is before  $C$ , which is the instant of the point  $c$ , and there is a point  $A$



outside the plane of the paper whose time  $A$  is before  $B$ . But  $a$  is repeated in time at the instant  $A_1$ , which may be represented on the time-line on either side of  $C$  from  $B$ . Whether  $a$  occurs at  $A$  or  $A_1$  there is irreversibility of succession. But there is nothing so far as Space is concerned to distinguish  $A$  and  $A_1$  since they occupy the same point  $a$ , although the point-instants  $aA$  and  $aA_1$  are different point-instants. Hence if we only know that  $a$  occurs at an instant  $A$  before  $B$ , we cannot tell where that instant is to be represented on the one-dimensional time-line, unless there is some property of Time which is different from irreversibility. On the other hand, betweenness secures the definite place of  $a$  upon the time-line, and is thus not only necessary but sufficient if there is to be a third and independent dimension of Space. As in the earlier case of the proof of determinate order as necessary with a second dimension, the reasoning depends on securing the unambiguous distinction of point-instants. For no point-instant can be repeated, while both the point and the instant may.



It follows as a matter of course that since every instant is connected with other instants continuously, in definite order and in the transitive relation, every point is related to other points in three dimensions, and is therefore voluminous. The physical point is in fact the limit of a volume.

Order.

It is difficult in discussing the elementary relations of Space and Time to avoid questions which belong to a later stage of our inquiry. One such question will have at once arisen in the minds of some. Irreversibility and betweenness have been on the faith of experience attributed to Time, and tridimensionality to Space. But why, it may be asked, is not Space credited with irreversibility of order and betweenness? Certainly if  $a$  is to the right of  $b$ ,  $b$  is not to the right of  $a$ ; and if  $a$  is to the right of  $b$  and  $b$  to the right of  $c$ ,  $b$  is between  $a$  and  $c$ . Has not the character of Time been represented by a line in Space so as to imply these characters of points of Space? The truth is that these are characters of order, and are so because they belong intrinsically to Time, and they belong to order because all order presupposes Time. Points in space are ordered in virtue of their time-character. This does not mean that they assume an order through our act in arranging them or selecting them by a process which takes time. Our procedure in dealing with positions in space or time has nothing to do with these positions themselves; at least it is the hypothesis of the present inquiry that the mind is merely contemplating what it finds in Space and Time. Our proposition means that positions in space are really ordered themselves, but that they are so ordered in virtue of the time-character which is essential to them. Merely as points, as positions in space, they do not possess order, any more than instants merely as temporal possess position in time—supposing that it is possible to think of points apart from their time or instants apart from their space, which we have seen it is not. Order arises out of the temporal character of positions in space; and it is this fundamental or elementary order which is presupposed in any order of more complex or qualitative things which are in any way

ordered, like pebbles in a row, or terms in a progression, or officials in a hierarchy.<sup>1</sup>

Let me, at the conclusion of this inquiry (which, be it observed, is entirely non-mathematical) into the precise relation between Space and Time, once more remark that it contains no attempt at a construction of Space and Time, as if we were giving reasons for them and for their experienced features, and in a manner affecting to preside over their creation. Such an attempt would be as foolish as it is unscientific. I have merely attempted to show how the various features of the one depend for their character on those of the other. The reason why Space has three dimensions is that Time is successive, irreversible, and uniform in direction. If we could imagine a Creator who had determined to make Time an asymmetrical transitive succession, he would, to carry out his purpose, have made a Space of three dimensions; and *vice versa* if he had determined to make a three-dimensional Space he would, to carry out his purpose, have made Time a transitive asymmetrical succession. This does not mean that one who knows the characters of Time could conclude from them to the three dimensions of Space, but only that he finds on examination that there is an intimate relation between the one and the other, a relation which requires reflective analysis to discover. The word 'must' or 'needs' which I have occasionally used means no more than that we are forced to look for something, which we may or may not find. We cannot say that Time implies Space in the sense in which the working of two laws in conjunction implies their resultant. The point is of sufficient general importance to be worth a few remarks even here. Suppose a man thought, I will not say that he could see a reason why there must be Space, but that he could see a reason why if there was to be Space there must be Time or *vice versa*, he might be asked how in the absence of an experience of Time he would be able to invent the idea of Time. All that he can do is to see that in Space as empirically presented there are features which are those of Time as empirically presented, and that the mutual relation

<sup>1</sup> See further later, Book II. ch. v.

of Time and Space is so close and ramified that they cannot be considered as separate entities but only as the same entity described in terms of its different elements. Other 'must' metaphysics does not recognise—except the must of logical implication, and wherever I have spoken of implication I have been careful to limit it to what the experience with which I have been dealing itself demands, and only so far as it demands it. The undertaking is hazardous and even presumptuous enough (and I cannot feel complete confidence that some error may not have crept in) not to be burdened with the suspicion of pretensions which are foreign to it.

Space-  
Time:  
(1) in  
mathe-  
matics;

We have thus by purely analytical or metaphysical and non-mathematical methods applied to a subject-matter presented in experience, arrived at a notion of Space-Time which at least in spirit is not different from the notion of a world in Space and Time which was formulated by mathematical methods by the late H. Minkowski, in 1908. The underlying conception had been used or implied in the memoirs of Messrs. Lorentz and Einstein, which along with Minkowski's memoir laid the basis of the so-called theory of relativity, which is now, I believe, common property amongst certain mathematicians and physicists. In Minkowski's conception the Universe is a system of world- or cosmic points; it is assumed that at each point-instant (the name<sup>1</sup> is due to Mr. Lorentz, *Ortszeit*) there exists some perceptible "substance," and the course of such a substantial point is called a cosmic line (world-line, *Weltlinie*). Space and Time are described as being shadows of the Universe. Only the Universe has self-existence. Every point has four co-ordinates, the time co-ordinate being the fourth. Hence it follows, as Minkowski writes, that geometry with its three dimensions is only a chapter in four-dimensional physics. There are infinite Spaces in the physical world, just as there are infinite planes in our Space. In fact, Space

<sup>1</sup> The term point-instant is used by Mr. A. A. Robb in *A Theory of Time and Space* (Cambridge, 1912).

becomes merely the assemblage of all events which belong to the same moment of Time.

Now I understand the essential spirit of the doctrine to be that Space and Time are not independent of each other but united in the one four-dimensional world, and with this the result of our empirical or metaphysical inquiry is in agreement. But there are some respects in which there is (as I must with becoming misgivings admit) divergence. I take for granted that to think of Time as a fourth dimension in a world in which the other three dimensions are spatial is a legitimate and the only possible way of representing mathematically the nature of the world or Space-Time. But if the empirical analysis is correct, this representation cannot be regarded as other than a means of mathematical manipulation. For it seems to treat Time as an additional dimension, not of course a spatial one, much in the same way as the third spatial dimension is additional to the other two, that is, as a further order in which three-dimensional Spaces are arranged. But the relation between Space and Time which we have found empirically appears to be of a much more intimate kind than is thus suggested. For not only are Space and Time indispensable to one another (as in the conception of Minkowski), but Time with its distinctive features corresponds to the three dimensions of Space, and in a manner of speech Time does with its one-dimensional order cover and embrace the three dimensions of Space, and is not additional to them. To use a violent phrase, it is, spatially, not temporally, voluminous. Metaphysically, (though perhaps mathematically), it is not therefore a fourth dimension in the universe, but repeats the other three. Space, even to be Space, must be temporal.<sup>1</sup> At a later point<sup>2</sup> I shall propose a non-mathematical formula which seems to me to express this relation with metaphysical propriety, without attempting to question the mathematical

<sup>1</sup> It follows also that the three dimensions of Space, just because they correspond to the characters of Time, are not in reality independent of each other (see before p. 51, note).

<sup>2</sup> Book III. ch. ii. A.



appropriateness of Minkowski's formulation. Beyond this, I call attention only to two other matters. According to the method customary in mathematics, it is taken for granted that there is a substance, electricity or matter or what not (the word substance is used expressly in order to avoid the question), which occupies the point-instant. On our hypothesis, whatever substance there is must be a fragment of the one stuff of Space-Time, and therefore is not to be assumed within the metaphysical account of Space-Time. Secondly, as will be mentioned presently, the definition of Space as the assemblage of events at one instant, which may be derived from Minkowski's doctrine and is formulated so by M. Langevin,<sup>1</sup> is connected with the same assumption of material events occurring at a point-instant, and while legitimate in one way, and true, does not tell us the essential character of Space but a consequence of it.

Space-Time:  
(2) in meta-  
physics.

Meantime, I may proceed with the metaphysical exposition. We have then to think of Space and Time in much the following way. (a) By themselves each consists of elements or parts which are indistinguishable so long as the elements of the other are excluded. (b) In reality each point of space is determined and distinguished by its instant in time, and each instant of time by its position in space. The elements of the one reality which is Space-Time, and not either Space or Time alone, owe their distinctness in either kind to the complementary element. We have not yet arrived at an examination of the notions of identity and diversity. But using these terms in their common sense, either of the two we may regard as playing the part of identity to the other's part of diversity. It is worth while observing this, because previously Time was shown to supply discrimination in the otherwise blank Space. But Space may equally well be regarded as introducing diversity into time. For without Space Time would be a bare 'now'

<sup>1</sup> *Le temps, l'espace et la causalité dans la physique moderne.* Bulletin de la Société Française de Philosophie, 12<sup>e</sup> année, No. 1, janvier 1912. Paris.

always repeated, and there would be no such thing as diversity. But the reality of Space and Time is in Platonic phrase<sup>1</sup> the "substance" which contains the identity and the diversity in one.

Space must thus be regarded as generated in Time, or, if the expression be preferred, by Time. For Time is the source of movement. Space may then be imaged as the trail of Time, so long as it is remembered that there could be no Time without a Space in which its trail is left. It would be inept to say that Time is in its turn the trail of Space, for Space of itself has no movement. The corresponding proposition is that Time as it moves from past through present to future (from earlier to later) is the occupation of a stretch of Space.

Space-Time thus consists of what may be called lines of advance connected into a whole or system in a manner to be described. In a line of advance  $c b a$  we have the displacement of the present from  $c$  through  $b$  to  $a$ , so that  $a$  becomes present while  $b$  becomes past and  $c$  still further past. The present means as before the point of reference. In terms of earlier and later,  $b$  having been later and  $c$  earlier,  $a$  becomes later and  $cb$  earlier. Now this is the meaning of motion. Points do not of course move in the system of points, but they change their time-coefficient. What we ordinarily call motion of a body is the occupation by that body of points which successively become present, so that at each stage the points traversed have different time-values when the line of motion is taken as a whole. Thus Space-Time is a system of motions, and we might call Space-Time by the name of Motion were it not that motion is in common speech merely the general name for particular motions, whereas Space easily and Time less easily is readily seen to be a whole of which spaces and times are fragments. Hence Descartes could identify Space with matter, and there is nothing astonishing in the hypothesis that Space as qualified with Time is the matrix of all being. But Motion we find it difficult so to represent to ourselves. It seems paradoxical consistently with the ordinary use of

<sup>1</sup> In the *Timaeus* (*οὐσία*).

language to speak of a single vast entity Motion, though to do so is to do the same thing as to speak of Space-Time.

Pictorial  
representa-  
tion of  
Space-  
Time.

But the notion that Space is generated in Time in the form of motion is apt to be misinterpreted. We may think of fresh Space as being swept out in Time. We figure advance in Time, the growth of the world, as an advance in column, and it is then easy to go on and treat the present moment as determining a section along this advance, so that Space becomes the arrested events of the present or any one moment. We then have the idea of an infinite spatial present sweeping forward in Time. Space is defined as the assemblage of events at one moment. We shall find that this proposition has under proper conditions a good and important meaning. But both it and the previous proposition that Time sweeps out fresh Space in its advance are open to fatal objections.

First of all, to suppose that Time generates new Space is to neglect the infinity of Time (and indeed of Space). It supposes a part of Space to be generated at the beginning and pushed forward. But a beginning of existence is itself an event in Space-Time which is the system of point-instants or pure events, and it is clear therefore that Space-Time as a whole begins either everywhere or nowhere. Infinity is understood here as explained before in its true sense of self-containedness.

Secondly, the notion that Space is what is occupied by any moment fails to give a true insight into the intrinsic nature of Space. A present which occupies the whole of Space would suffer from the same defect as a mere instant disconnected with other instants. We saw that an instant which was not through Space connected with its past would not be an instant of Time at all, because its past would have perished and it would perish too. The present so described would be all that there was of Time, a 'now' perpetually re-created. If it were spread over the whole of Space, it and its Space would need to be re-created at each moment.

We have then to abandon the notion of an advancing

column and of Space as a mere instantaneous section of that advance. We have to think of lines of advance as displacements of the present in relation to past and future over positions in Space. In this way we conceive of growth in Time, or the history of the Universe as a whole, or any part of it, as a continuous redistribution of instants of Time among points of Space. There is no new Space to be generated as Time goes on, but within the whole of Space or the part of it the instants of Time are differently arranged, so that points become different point-instants and instants become also different point-instants. I believe that this very abstract (I mean very simple, yet highly concrete) conception lies, in fact, very near to our common notions of a growing world.

But an abstract conception is difficult to retain without a pictorial and more complex representation, and there are several at hand to replace the misleading image of an advancing column. The simplest way is to imagine a limited space, and motions taking place within it. We may choose a disturbed ant-heap or the less pleasing instance of a rotten cheese seen under the microscope. But a severer and more useful picture is that of a gas in a closed vessel, conceived according to the kinetic theory of gases. The molecules of the gas dash against the sides of the vessel and each other in all manner of lines of advance, whether straight lines or not is for us indifferent. The molecules stand for instants of Time with their dates, some being earlier and some later, in various degrees of remoteness, than the point-instant which is the centre of reference; some simultaneous with it, that is, possessing the same date. The gas is not considered as it is at any moment but as it exists over a lapse of time. We are not supposing the internal motions to be arrested at a given instant which is taken as the point of reference, which would be to suppose arrested what is intrinsically a movement. For us it is perfectly easy to contemplate the motions of the gas over such a lapse of time, for we have memory to help us and expectation, and we can keep in our minds at once a limited piece of the history of the gas. Subject to this explanation we can revert to our

usual form of speech and say the molecules are some of them present instants, some past, and some future instants, and the incongruousness of future instants disappears, for they are objects of our minds, that is, objects in expectation, equally with present and past instants. Like all pictures which symbolise a conception the image halts; and in two respects. First, the instants of identical date are separate molecules, whereas simultaneous instants, as we have seen, are the same instant, and have no temporal but only spatial difference. Here both the molecules and their places are distinct. Secondly, there need not always be a past molecule to take the place of the 'present' one as the present one moves on to a new point in space, leaving its old place to be past or earlier. There are places in the gas empty of molecules. But in Space-Time there is no place without time. Still the picture conveys fairly well the notion of redistribution of instants among points. In some respects the streaming of protoplasm in a cell would be a more manageable image. Best of all perhaps, and certainly very useful, is the picture of the condition of a growing organism where we find a perpetual alteration or redistribution among the cells of distance from maturity; some being mature (the present), some moribund, in different stages of senescence, and still others adolescent.

We have now to see how Space is to be thought of more accurately as saturated with Time, that is to say, as the theatre of perpetual movement; and secondly, in what sense it is true to say that any instant occupies the whole of Space, or that any point occurs in the whole of Time.

## CHAPTER II

### PERSPECTIVES AND SECTIONS OF PHYSICAL SPACE-TIME

THE physical universe is thus through and through historical, the scene of motion. Since there is no Space without Time, there is no such thing as empty Space or empty Time and there is no resting or immoveable Space. Space and Time may be empty of qualitative events or things, and if we are serious with Time there is no difficulty in the thought of a Space-Time which contained no matter or other qualities but was, in the language of Genesis, without form and void before there was light or sound. But though empty of qualities Space and Time are always full. Space is full of Time and Time is full of Space, and because of this each of them is a complete or perfect continuum. If this might seem a quibble of words, which it is not, let us say that Space-Time is a *plenum*. Its density is absolute or complete. There is no vacuum in Space-Time, for that vacuum would be itself a part of Space-Time. A vacuum is only an interval between bodies, material or other, which is empty of body; but it is full with space-time. Hence the old difficulty that if there were no vacuum motion would be impossible is without foundation, and was disposed of by Leibniz in answering Locke.<sup>1</sup> If it were completely full of material bodies with their material qualities there would be no room for locomotion of those bodies with their qualities. But it is only full with itself. Material bodies can move in this absolute plenum of Space-Time, because their motion means merely that the time-coefficients of their spatial outlines change.

No empty  
or immove-  
able Space.

<sup>1</sup> *Nouveaux Essais*, Preface (Erdmann, p. 199b, Latta, p. 385).

In the next place, there is no immoveable Space. In one sense, indeed, Space is neither immoveable (or at rest) nor in motion. Space as a whole is neither immoveable nor in motion. For that would suppose there was some Space in which it could rest or move and would destroy its infinitude. Even when we speak of Space as a whole we must observe that it is not a completed whole at any moment, for this would omit its temporality. Under a certain condition, to be explained presently, we may indeed contemplate Space as an infinite whole when we consider only the points it contains. Directly we allow for its Time, we realise that while there may be a complete whole of conceived timeless points there cannot be one of real point-instants or events. For incompleteness at any moment is of the essence of Time. Neither strictly can the universe be said to be in motion as a whole. It *is* motion, that is in so far as it is expressed in its simplest terms.

But it is not Space as a whole which is understood to be immoveable. The immoveable or absolute Space of Newton is the system of places which are immoveable. Now since every point is also, or rather as such, an instant, a resting place is only a place with its time left out. Rest, as we shall see more clearly presently, is only a relative term.

Perspectives and sections.

With this conception of the whole Space-Time as an infinite continuum of pure events or point-instants let us ask what the universe is at any moment of its history. The meaning of this obscure phrase will become clearer as we proceed. The emphasis rests upon the word history. Space-Time or the universe in its simplest terms is a growing universe and is through and through historical. If we resolve it into its phases, those phases must express its real life, and must be such as the universe can be reconstructed from in actual reality, they must be phases which of themselves grow each into the next, or pass over into each other. We are to take an instant which occupies a point and take a section of Space-Time through that point-instant in respect of its space or time.

The point-instant in question we may call the point or centre of reference. What will this section of Space-Time be, or what would it look like to an observer supposed to be looking at it from the outside, if we make such an impossible assumption of an observer outside the whole universe? The natural and immediate answer would be, the time-section consists of the whole of Space as occupied in every point by events occurring at that moment. For we are accustomed to think of Space as so occupied. It is true that at this moment some event or other is occurring at every point of Space. I may not be aware of them directly, but I can know of them by report, and can anyhow think of all those events that occur at this moment. Accordingly it would seem that any moment a section of the universe would be nothing other than the whole of Space; and Space may then be described as the assemblage of events which occur at the same moment of time. Now I shall try to show that this Space so described is under certain conditions something real and legitimately conceived. It is a legitimate selection from the whole of Space-Time. But it does not represent what Space-Time is at any moment of its history. The fuller reasons will appear later. At present it is enough to observe that if Space is the assemblage of all events occurring now, it is open to the same objections as were urged against the notion of a single point or a single instant. It does not matter whether the instant occupies a point or the whole of Space; the universe cannot be composed in reality of such sections. An integration of such sections does not represent the history of the world. The world would need to be re-created at every moment. To insist on this is but repetition. For the moment which is now would be a now which perished utterly and was replaced by another now. Time would cease to be duration and would be nothing but a now, for the different nows would have no continuity. We should vanish utterly at each moment and be replaced by something like ourselves but new; to the greater glory perhaps of a Creator who would be completely unintelligible, but to the confounding of science in his creatures.



We have to distinguish from this legitimate but artificial selection a selection of point-instants which shall be the state of Space-Time at any historical moment of its continuous history. I shall describe such a section as Space-Time considered with reference to the point-instant which is taken as the centre of reference, and I shall call it a 'perspective' of Space-Time taken from that point of reference; and for convenience I shall speak of the previous selection distinctively as a 'section.' Both are in fact sections of Space-Time, but in different senses; and it is useful to have different terms. The justification of the term perspective will appear presently. The perspectives of Space-Time are analogous to the ordinary perspectives of a solid body. They differ from them in that these are taken from some point outside the body, whereas the point or instant from which a perspective of Space-Time is taken is included in the perspective itself. The choice of the word is suggested, of course, by Mr. Russell's use of it in recent inquiries in his work on 'External Reality,' as that in its turn is affiliated with Leibniz' conception of the monads as mirroring the universe from their several points of view. Meantime we may contrast the two conceptions by illustrations. At any moment of a man's history his body is a perspective at that instant of his whole life. But it consists of cells at all degrees of maturity. We have the space of his body occupied by parts, some mature at this moment, and others which are immature or senescent. In other words, his space is of different dates of maturity. We might, on the other hand, think of his space as occupied with cells of the same maturity, and we should have the same space, and it would all be of the same date, but it would not be the man's body as it is at any moment whatever but a selection from various stages of his history. It would, however, give his shape. Once more the illustration limps because the man's space changes in volume with his growth. But we may suppose him not to alter; and in Space-Time since Space is infinite the difficulty does not arise. Or we may illustrate by a section of a tree. As mere dead wood the space of the section is given to us at

one moment. But in the history of the plant, the concentric rings of the wood are of different dates. To the eye of the botanist the section is variable in its time; to the eye of the carpenter, or better still of the person who sits at it when it is a table, it presents no such variation.

When therefore we consider Space-Time with reference to an instant of time, that is to a point-instant in respect of its time, we shall have the whole of Space, not occurring at one instant but filled with times of various dates. There is a continuum of events filling Space but divided by the point of reference into earlier and later, with the exception of those points in which the instant of the centre is intrinsically repeated, and which have the same instant. The other points will be earlier and later at various dates, and since any date is repeated in space there will be at each date points contemporaneous with each other,<sup>1</sup> but earlier or later than the centre and its contemporaries. There are, if we choose to use a technical term, equitemporals or isochrones in space (just as there are in a perspective from a point equispatials or isochors in time). Call  $O$  the instant of reference. One of its points is  $o$ ; there are points intrinsically contemporary with  $o$ . A point  $a$  is earlier than  $o$ , and if we call the time of  $o$  the present,  $a$  is past. The point  $a$  is of the same date as  $b$  and is earlier than  $c$ . For example,  $a$  and  $b$  may be contemporary points of the same structure, e.g. my hand;  $ac$  may represent a transaction of causality, for example a bullet killing a man, that is, with reference to  $o$ ,  $a$  and  $c$  are occupied by the events in question. Now the meaning of such reference in date to  $o$  is that the events  $a$ ,  $b$ , and  $c$  lie on lines of advance which connect them with  $o$ . Directly or indirectly  $o$  is connected by spatio-temporal events with every point in Space, as for instance the cells in a body are connected directly or indirectly with one another. The lines of advance need not necessarily be straight (as when, for instance, we see events in space by light, which proceeds, or is thought to

Perspectives of Space-Time from an instant.

<sup>1</sup> E.g. all the points on the same spherical surface if the lines of advance are those of light.

proceed,<sup>1</sup> in straight lines) but may be of the most complicated character. The comparison with light is the reason why the term perspective is appropriate to such a picture as we have drawn. For not only is it true that to an outside observer the various points of space would be at different dates, but he would get that perspective by being situated at the point of reference.

Accordingly I may illustrate the difference of dates in Space in the perspective from any instant by reference to a human percipient, supposed to be at the point of reference. Only whereas in his case the lines of advance by which he apprehends events outside him are the very developed and differentiated movements by which his senses are affected, with a pure event or point-instant the lines of advance are but the movements in Space-Time by which the centre is related however circuitously to the other points of Space. Moreover, in using the illustration, we assume according to our hypothesis that what the man perceives and the act of perceiving it are separate events whose reality is not dependent on or does not owe its existence to the reality of the other. As an example of a line of advance connecting the past or earlier point with the centre, I might take any sensation, for it is certain that the act of sensing a flash of light follows by a small but measurable interval the flash itself as a physical event. A better instance is the familiar case of apprehending Sirius and his place in the sky by means of the light from him which reaches my eyes some nine years after the event. What I see is an event which happened nine years ago at the place where I see it (though I see the distance very roughly); and Heaven knows what may have happened to Sirius between the date of what I see and now when I see him.

In the same way I may apprehend in my imagination a later event which, in reference to now, is future. Nine years hence I may apprehend what is taking place at Sirius at this moment, if Sirius now exists. (We have yet to

<sup>1</sup> I add the reservation because I understand that according to Mr. Einstein's most recent work light may not travel in perfectly straight lines.

see how we can with propriety speak of Sirius as existing at this present moment at all, since I only see him nine years late.) I mean by thinking of Sirius and his position in the future that there is a system of transactions now begun which will end by enabling me to see Sirius then. This system of transactions is begun on my side by the expectation in my mind of seeing Sirius; it was begun on the side of Sirius by the causes which lead to his continuance. Generally, the point  $c$  is future to  $o$  in that transactions in Space-Time are set up which will enable me at some future time to date  $c$  as contemporary with my present moment. There is a line of advance from  $o$  to  $c$  as well as a line of advance from some other event before  $c$  to  $c$ . Again, when  $a$  and  $b$  are contemporary events in the past they are connected by different lines of advance with  $o$ ; and when  $a$  is before  $c$  the two points are successive in reference to  $o$  as when a percipient follows the causal succession in a bullet's hitting a man.

Continuing the human metaphor, which we shall find at long last<sup>1</sup> to have its justification, we may personify Space, and having regard to the differing dates of its points with reference to the centre, which is the present of that perspective, we may say that Space at any moment is full of memory and expectation. The objection may be made, how can reality contain at this moment the past, for the past is past and exists no longer? But the difficulty is only apparent. It arises from identifying reality with the present or actual reality; it assumes in fact that Time is not real. The past event, it is true, does not exist now, and if existence is taken to be present existence, the past clearly does not exist. But if we avoid this error and take Time seriously, the past possesses such reality as belongs to the past, that is, to what is earlier than the point of reference; it does not exist now but it did exist then, and its reality is to have existed then. As to the later or future, there is at bottom no greater difficulty in speaking of the future as being real and existing really than there is in respect of the real existence of the past. A future or

<sup>1</sup> See later, Bk. III. ch. ii. A, where it will be suggested that the instant of a point is its 'mind.'



later point does not occur now, and therefore it is now not-yet, just as the past is now no longer. It has what reality belongs to it in the real Time. Thus in describing Space-Time in reference to a centre of reference which is now—its perspective from that point of view—we are not supposing that the universe is stopped at that moment artificially, in which case there would, as some think, be a now spread out over infinite Space. They are mistaken; for there would then be no Time and no Space. We are determining which among the instants of the whole of Time belong to the points of Space in their relation to the centre. We find that so far is it from being true that at any moment in its *history* Space is completely occurring now, that the only points which occur now or are filled with the present are the points in which the instant of reference is intrinsically repeated.

Empirical  
verification.

This proposition that Space considered at any moment is of various dates is very elementary and in that sense abstract. But before proceeding I may note that as an empirical fact Space, when we apprehend it through the senses and, therefore, as filled with 'qualified'<sup>1</sup> events, and not merely with pure events, is not presented to us as simultaneous. I assume, for the reasons just mentioned, that what we sense is anterior to our act of sensing it, because of the time it takes the physical event to stimulate our organs. Bearing this in mind we can conclude what the time-relations are, not so much to ourselves, for that is not relevant to our purpose, but among the different objects perceived. If I am using eyes to apprehend Space through (I am not saying that we apprehend Space by sight but we do apprehend it through sight), it is clear that since different points of space are at very different distances from the eye, and the light reaches it from them in different times, however slight the difference of distance from my eyes may be, more

<sup>1</sup> The word has Dr. Johnson's authority. "Lord Southwell was the highest-bred man without insolence that I ever was in company with, the most *qualified* I ever saw" (Boswell, March 23, 1783, G. B. Hill's ed., vol. iv. p. 174).

distant points must in general have occurred earlier than nearer ones, in order that my acts of seeing the various sets may occur at the same moment. This applies not only to vast differences of distance, as between my lamp on the table and Sirius, but to points only slightly remote from one another. There will also be certain points which are equidistant from the eyes and are simultaneous with one another. So much for sight. Even with the hand it would be difficult to prove that all points touched by the hand can send their messages through to our mind in equal times, as they must if the sensing of them is to occur at the same time. Empirically then, though we may take in an immense space in an act which, however complex, occurs all together, the Space which we apprehend is presented with different dates, though to discover this may need reflection.

Two kinds of retort may be imagined to this statement. It is based on the deliverance of the senses; and the senses deceive. To which the answer is, that with all allowance for the feebleness and treachery of the senses, they have established themselves, if there is any truth in the doctrine of natural selection, by adaptation to the very objects which it is their office to observe. We *are* "miserably bantered by our senses," and, moreover, we shall learn that, since we only apprehend Space and Time by the help of the senses, we pay for the privilege of seeing colours, and for the delicate touches and movements of the wood-worker or the etcher, by making mistakes about position in space or time. But we cannot believe that though the senses may confuse our apprehension in this respect, they are there to pervert it.

Let me add the application of this remark, or its extension, to the bare point-instant which is the point of reference. There, too, it might be asked how we can be sure that two contemporary points *a* and *b*, in which the same instant repeats itself intrinsically, are contemporary for *O*, or if *a* is really before *c*, that it will precede *c* for *O*. The date in reference to *o* is determined by the line of advance from the point to *o*. How can we know that the dates are, as it were, 'apprehended' accurately by *o O*?

The doubt is really suggested by humanising  $o$   $O$  and treating it as if it were a sensitive subject, with all the drawbacks possessed by such. But consider  $o$  and  $a$ ,  $b$ , and  $c$  in their purely spatio-temporal character. If  $a$  and  $b$  are intrinsically isochronous and  $a$   $A$  and  $b$   $A$  are in the perspective from  $O$ , that means that Space-Time is such, and its point-instants so connected with each other by lines of advance, that two intrinsically isochronous points belong to the same perspective of Space as  $o$ . If they were not isochronous relatively to  $o$ , they would not appear in the perspective from  $O$ . For  $o$  is itself part of the perspective. It is only because we suppose it to be looking on at Space from the outside, and endow it with something like our sensibility, that we think of it as open to misapprehension. Being so simple, it is infallible. On the other hand, if any two points  $x$  and  $y$  are not intrinsically isochronous, but only happen to be so for this perspective, they may not be so in a different perspective.

The second retort is that perhaps it is true that, perceptually, empirical space-positions occur at different times; but, conceptually, they are all simultaneous. Something will be said hereafter of the relation of concepts to percepts. But at least it is not the business of concepts to distort perceptual objects but to indicate the pattern on which they are built. If perceived Space is full of Time there is no conceived or conceptual Space which is unfilled with Time. On the contrary, the concept of Space must all the more urgently provide for the change of Time within Space. It is true that our familiar notion of Space as a framework in which events occur all over it at the same moment is, as we have said, a legitimate and real notion, and we are yet to explain how it arises. But though it implies thought, it does not rest on the difference of conceptual and perceptual Space but on another distinction, namely on the distinction between partial and total Space-Time, between spatial perspectives of Space-Time and Space-Time as a spatial whole.

Perspectives from a point.

Hitherto I have been dealing with perspectives of Space-Time from the point of view of a single instant as

located at a point. But in the same way there are perspectives from the point of view of a point of space as located in its instant of time. Once more the section of Space-Time across a point might seem to be the whole of Time, and Time might be described as the assemblage of events which occupy a single point. Metaphysically this would be open to the same objections as the notion of Space as an assemblage of events occurring at the same time. The point would be discontinuous with other points, would be a mere 'here,' and would require as before re-creation of the world in each 'here.' But when we take not the section of the world through a point but its perspective, we shall have the whole of Time occupying not the same point but points of Space at all manner of distances from the central point of reference. That is just as a perspective from an instant is spread out over the whole of Time and presents all variety of dates, a perspective from a point is spread out over the whole of Space and presents all varieties of locality. It would be tedious to enter into the details which correspond to the details of the preceding picture. I will only note that in our empirical experience this state of things is as much a fact as in the other case. Still, assuming the hypothesis that what I remember and what I expect are distinct existences from me, we realise that in thinking of the history of the past or divining the future, the events are located not in one place and still less in no place at all, but in the places where they occurred or will occur, however inaccurately we may apprehend their positions. The full development of these matters belongs more properly or more conveniently to the next chapter, and I must ask something from the sympathetic imagination or patience of the reader. There is a machinery of imagination and memory for sorting out events into the places to which they belong.

A perspective from an instant of time and one from a point of space are different perspectives, and cannot be combined into a single perspective. This may at first present a difficulty. The instant from which a perspective is taken occupies a point or points.  $O$  occupies  $o$  and

its contemporaries. But  $o$  is itself intrinsically repeated in time. Why are these repetitions of  $o$  in time left out of the perspective? The answer is, that if  $o$  is repeated at  $O'$  and  $oO'$  is taken into the perspective, the perspective would be taken not from the instant  $O$  but from  $O'$  as well. We include in the point of view  $O$  all the contemporary points occupied by  $O$ , but we cannot include the other times which occupy  $o$ . In fact, a perspective from an instant gives us a picture of Space; a perspective from a point gives us a picture of Time. If we attempted to combine the two pictures, and to get a 'perspective' of Space-Time from the point of view both of the place and time of the point-instant  $oO$ , we should have, as a little consideration will show, not a perspective at all but the whole of Space-Time. Space-Time considered in reference to a point-instant from the point of view both of the point and the instant is nothing but Space-Time.<sup>1</sup>

Relation  
of the per-  
spectives  
to one  
another.

Total Space-Time is the synthesis of all partial space-times or perspectives of Space-Time. I use the awkward word 'total' in order to avoid two others, either of which might be misleading. The one is the adjective 'universal,' which is ambiguous and might suggest just what it is desired to avoid, namely, that the whole continuum of point-instants is a concept derived from special bits of Space-Time or even from perspectives or partial space-times. Whereas it is, to use language borrowed from Kant, which may pass muster at present, a single infinite 'individual.'<sup>2</sup> The other adjective 'absolute' I avoid because of its historical associations with Newton's doctrine of Absolute Space and Time.

What we have to see is first, what information we can draw from our experience, in pursuit of our empirical method, as to the differences between different perspectives; and secondly, that these perspectives are of themselves connected with one another, so that the synthesis

<sup>1</sup> See later, Book IV. ch. i., for the connection of this with the so-called ontological argument.

<sup>2</sup> Later it will be seen that Space-Time is not an individual.

of them is not an operation which we, human subjects who think, perform upon them, but one which they, as it were, perform on themselves. For a perspective of Space-Time is merely the whole of Space-Time as it is related to a point-instant by virtue of the lines of connection between it and other point-instants.

The information we get from experience is first, that points of space which are simultaneous in one perspective may be successive in another, and points which are successive in one may be simultaneous in another. A simple instance of the first is that on one occasion two points in my hand may be isochronous for me or my brain, but on another occasion, when the time has changed and the point-instant of reference therefore with it, the one may precede the other. For example, in a new perspective an electric current may have been sent from one point to the other, and the points are successive. Observe that it is not the physical or qualified events at the two points of my hand which have changed their relation in Time; but only that in the two perspectives the points of Space have become differently dated. Again, suppose that  $a$  is earlier than the centre  $o$ . In a different perspective  $a$  may have the same date as  $o$ . Thus let us go back to Sirius, and merely for simplicity's sake (and because without some simplification, however impossible in fact, the mind is apt to reel before the complexity of things) let us assume that Sirius and I remain fixed with relation to each other. The event which I now see in him by the light from him is nine years old. But, on a different line of advance in the universe from the path of transmission of light, an event may be, and probably is, occurring in Sirius which is nine years later than the event there which I now see. If it comes into my present perspective at all it is as a future event. For simplicity let us suppose I am not expecting it and that it does not enter into the perspective. Still, it occurs in fact at the same instant as  $o$ ; that is, from some point of reference different from  $oO$  the points  $o$  and  $a$  will be of the same date. Again I observe, that it is not the real physical events, my sight of Sirius now and the

(1) Differences of perspectives.



past physical event in Sirius, which will have, as it were, become contemporary, but only that the points at which they occur have become differently dated, that is, in the new perspective are occupied by different physical events. In the new perspective the future event in Sirius enters as contemporary with my present sight of him. It is not the same event as  $aA$ , but it occurs we are supposing at the same point. In other words, the points of Space are filled with different instants owing to that redistribution of instants among points which makes the history of Space-Time. Thus there are isochrones of  $o$  in the whole of Space, which are not related to it as its isochrones are in its own perspective, and which do not appear as isochrones in that perspective.

In general a perspective of Space-Time from one point-instant differs from the perspective from another point-instant, whether the perspectives be taken in respect of the instants or points. Points which were simultaneous in the one may be successive in the other; the interval of time or space may be altered, and even two points may reverse their dates in the different perspectives. For though a perspective takes in the whole of Space or the whole of Time, it does not take in the whole of Space-Time, the totality of point-instants; it would otherwise not be a perspective. If we endow point-instants with percipience, all these changes in the distribution of points among instants will be perceived accurately; for the percipient sensibility of so simple percipients must be also supposed perfectly simple.<sup>1</sup> We are here within the region of Space-Time pure and simple, before qualified events, like the fall of a stone or the birth of a flower, or the existence of complex percipients like plants or ourselves. Hence I have been obliged to repeat so often that qualified events do not occur in different places or at different times because their dates and places may be changed in two perspectives. The place at which they occur or the time which they occupy, if the event in question remains within the perspective,

<sup>1</sup> For the questions raised by this idea (cp. above, p. 74) of the perfect accuracy of perception of point-instants, see later, Bk. III. ch. vii.

alters its date or its place; their place or date in the first perspective is now occupied by some other event. We must add that such changes may not be noticeable to more complex percipients, because the extent of them may not fall within the limits of the discrimination of the percipient or class of percipients even with the help of instruments of precision, or because the difference is for them of no practical importance. Simultaneous events may seem to them still simultaneous, or the intervals, spatial or temporal, not to have altered, because the change is not perceived or is not interesting. One illustration we have already had, in the belief that what we see of Space is all contemporaneous.

Next let us note that the various perspectives of the universe viewed from points or instants, or the contents of the universe as referred to a centre of reference, are of themselves connected, and together constitute the whole universe. Each perspective leads on to some other. The redistributions of dates among points are linked in one continuous process. For a point of reference is a point-instant. Its place is temporal, and merely an ideally separated position in a movement; is, in fact, a movement at its limit. Whether we consider the time-element or the space-element in it, both alike are transitional. Point merges into point and instant into instant, and each does so because of the other. Our centre  $oO$  is the next instant at the time  $O'$  and becomes  $oO'$ , or to keep our notation uniform  $oO'$ , and the world referred to this new point-instant is a different selection from the world of point-instants.<sup>1</sup> The mere fact that each perspective is from the beginning a selection from a whole, and not a construction by the centre to which it is referred, is enough to show that the perspectives are in their own nature united, and need no combining hand. It is in this sense that the whole of Space-Time is the synthesis

(2) Their connection.

<sup>1</sup> Not of course from the world of points. Every perspective includes the whole of Space and the whole of Time, but not the whole of Space-Time. That is, every point in Space is there with some date, and every instant in Time with some place; but not the whole mass of point-instants.

of partial space-times or perspectives. At a later stage<sup>1</sup> we shall see how important this consideration is for understanding the relation of perspectives, in the ordinary sense, of finite things like houses.

Corresponding remarks may be made about perspectives from points. Moreover, the two sets of perspectives are not only internally connected but connected with one another. The instant from which a perspective is taken being located at a point, the perspective from it is connected with the perspective from the point.

Total Space  
and Time.

Total Space-Time is thus the synthesis of all perspectives, which is, in fact, only another way of saying that the perspectives are real perspectives of it or are its historical phases. Owing to the infinite interconnection of point-instants on different and independent lines of advance, independent, that is, of those which pass through any given point of reference, there is an infinity of such perspectives. Not limiting ourselves therefore to any one centre of reference but admitting infinite such centres, we can see first of all that when we are considering all the perspectives from every instant, any point of Space is occupied, not as in the single time-perspective by some one moment of Time but by the whole of Time. The whole of Time in the totality of such perspectives streams through each point of Space. Thus while the state of Sirius nine years hence may not enter into my present perspective (except in expectation) it occurs on some independent line of advance (not included in my perspective) at the present time in the total; and extending our view to all perspectives, we see that the position of Sirius is occupied by some time or other through infinite Time. The position in Space is occupied by only one time in a given time-perspective, but by all Time in the totality of perspectives.

In the same way consider the totality of point-perspectives, that is, perspectives from the point of view of a point. In a single such perspective an instant is localised in only one position of Space. But in the

<sup>1</sup> Bk. III. ch. vii.

totality of them each instant is localised in all positions in Space. We saw that it was a condition of the very nature of Space-Time that each instant was repeated in space and each point in time. But we now see that while for any perspective (which is of course three-dimensional and possesses the corresponding characters of time) there is this intrinsic repetition, every time having its appropriate isochors and every point its appropriate isochrones; in total Space-Time each point is in fact repeated through the whole of Time and each instant over the whole of Space. Now when these particular selections are made of point-instants, the one from the total of one set of perspectives and the other from the other set, we have a total Space which occurs at one instant and a total Time which occupies one point.

The total Space and Time so arrived at are what we called, in distinction from perspectives, sections of Space-Time. They do not represent what the world of Space-Time is historically at any moment or at any point. For at any moment of its real history Space is not all of one date, and Time is not all at one point. But Space and Time so described can be got by an arbitrary selection from the infinite rearrangements of instants amongst points. And the result of the selection is to give us Space apart from its times and Time apart from its places. That Space and that Time are what is meant by the definitions of them as assemblages, the one of all events of the same date, the other of all events at the same place. Moreover real Space with its varying dates coincides with this total Space when the variation of dates is omitted; and correspondingly for Time. Hence from considering the true perspectives of Space-Time we can arrive at the notion of Space occurring at one time or Time occupying one place. But from these sections we cannot arrive at the notion of true perspectives or at true Space-Time. I need not now repeat the reasons why.

It is because Time is intrinsically repeated in Space and Space in Time that it is possible at all to speak of Time or Space by themselves, when in fact neither exists apart

Absolute  
Space and  
Time.

from the other. They get shaken apart from each other in thought, just as the shape of billiard balls of varying colour gets shaken apart from the varying colour. But when we go on to consider the whole of Space-Time and discover that the whole of Time when you choose from all the perspectives, or when you make an arbitrary selection of space-points, streams through every point, and the whole of Space can be filled out with places of the same date, we then formulate the two conceptions, one of a Time which flows uniformly on and the other that of a Space immovable: what are commonly known as Absolute Time and Absolute Space, and, so far as I can judge, the ordinary or 'common-sense' notions of Time and Space. Arbitrary as the selections are, they are possible, and it is easy to see under what conditions the conceptions are valid, or the Space and Time in question can be regarded as real. They are valid so long as Absolute Space is understood to be total Space and not supposed to exclude Time, or Absolute Time to exclude Space, with their respective variations of date and place. They are the fully formulated Space and Time when these are shaken apart from each other. What is false in them is to suppose them real if Space is understood to occur at one instant or Time at one point. But if no such assumption is made, (and I believe no such assumption is made in mathematics, but the two are considered merely apart from one another without any ulterior view as to their relations,) then the whole of Space is the same framework as belongs alike to the real and the arbitrary selection from Space-Time at any instant; and the whole Time is the framework of the real and the arbitrary selection from Space-Time at any place. So understood, not only are they useful and valid conceptions, but they are real, in the same sense as the material body of an organism can be said to be real and the life of it also real, though the life does not exist without a body of a certain sort, and the body, to be the kind of body that it is, depends on life. In other words, the reality of Space-Time may be resolved into the elements total Space and total Time, provided only it be remembered that in their

*combination* Space is always variously occupied by Time and Time spread variously over Space.

Hence we may note the impropriety of distinguishing total Space as conceptual from empirical Space (the only *Space* we know) as perceptual. Space and Time are shaken apart from each other. But total Space is no more the concept of Space than the shape of the billiard ball is its concept while the whole ball is a percept. Total Space is the same as real Space with the Time left out, by an abstraction which is legitimate or not according to the use made of it. If the concept of Space were got by omitting Time which is vital to it, the result would be not a concept but a false product of thought. The separation of the Space from its Time involves abstraction and, so far, thought, but concepts are not arrived at by abstraction.

I have so far spoken of total Space and total Time. In dealing with the conceptions of them as absolute I am partly beset with the historical difficulty of interpreting Newton's ideas, a task to which I am not equal, but mainly I am concerned with the question how far we can validly speak of an absolute Time and Space. I leave it to others to say whether it is not the idea of what I call total Space and total Time, Time and Space taken as wholes, which is in the background of Newton's mind. His familiar illustration of absolute motion at any rate, which I give in the note,<sup>1</sup> suggests this interpretation. What is defective in Absolute Space is the notion of

<sup>1</sup> *Principia*, Bk. I., Scholium to Definitions.

"If the earth is really at rest, the body which relatively rests in the ship will really and absolutely move with the same velocity which the ship has on the Earth. But if the earth also moves, the true and absolute motion of the body will arise partly from the true motion of the Earth in immoveable space; partly from the relative motion of the ship on the Earth: and if the body moves also relatively in the ship; its true motion will arise, partly from the true motion of the Earth in immoveable space, and partly from the relative motions as well of the ship on the Earth as of the body in the ship; and from these relative motions will arise the relative motion of the body on the Earth."

In other words, the true or absolute motion is the motion when you take it in the whole of Space and not in relation to any one body in Space.



resting places. Space as a whole we have seen is neither immoveable nor in motion. But neither can a place be at rest if Space is only one element of Space-Time. Rest, in fact, appears to be purely relative and to have no real existence. Every place has its time-coefficient and is the seat of motion. In general, we speak of rest only wherever the motion is irrelevant for our purposes. This may arise from various reasons. Two motions may be the same, and the moving bodies, though each in motion, are at rest relatively to each other. Or I may rest in my chair while the mosquitoes move around me, but I am moving with the earth. I neglect that motion because I am interested in the mosquitoes, and because the mosquitoes also in following me move with the earth. But while I do not change my position relative to the earth they do. It seems, in fact, clear that if anything could be absolutely at rest everything must be at rest. For if any point in space retained its time, this would dislocate the whole system of lines of advance within Space-Time, a point being only a point on such a line.

Thus if absolute rest means the negation of motion, there is no such thing in reality. Rest is one kind of motion, or, better, it is a motion with some of its motional features omitted. But if absolute rest means merely position in space with its time left out, it is a legitimate abstraction if so understood. It may be gravely doubted whether anything else is ever intended by those who speak of absolute rest, though once more I do not enter into the interpretation of Newton, as being beyond my competence.

It is important to distinguish the different antitheses into which the idea of Absolute Space or Time enters. Absolute may be opposed to relational. Space may be treated as a stuff or as a system of relations. Or absolute may be opposed to relative. The two questions are not easily separable. It may be doubted if Newton, for whom Space and Time are non-relational, distinguished them; but they are distinct. Now with the relativity of position in time or space or of motion as commonly understood nothing in our conception of Space-Time

conflicts. When motion or position is declared to be relative, we are thinking of the material bodies or the qualitative events which occupy times and places and are moving. Relative for Newton refers to the sensible measures of space or time. In regard to them all the commonplaces of the subject are evident. A thing is to the right of A and to the left of B; or more important, A which is to the right of B is also from the point of view of another observer to the left of B. An event is before another event and after a third. A train may be at rest with respect to another moving train but in motion with respect to the telegraph poles. Or the train may seem at rest and the telegraph poles to move. In fact a motion of A with respect to B which is at rest is equally a motion of B with respect to A which is at rest. This relativity has sometimes been urged by philosophers to demonstrate that Time or Space is self-contradictory and therefore unreal. A present event is next moment past and some other event is present, as if to call both events by the same name in different connections made any difference to the real position of an event.

But the case is different when instead of qualified bodies or events we think of the pure events or point-instants which in their continuity make up Space-Time. It is true that these events are related to each other. But to call position or motion absolute is merely to say that these positions and motions are what they are in their own right. It is simply untrue to say that two point-instants or pure events may be indifferently either before or after each other. The same points may be occupied by times which are before or after each other, but the two point-instants in total Space-Time are not the same in the two cases. We may help ourselves in this situation according to our custom by reference to human affairs. All good actions are relative to their circumstances and good under those circumstances; and it is sometimes thought that they cannot therefore be absolutely good or good in their own right. Absolute goodness is then regarded as some ideal which serves as a standard to which we can only approximate. On the contrary, it is because good actions

Absolute  
position or  
motion.

are relative to or determined by their circumstances that they are absolutely good. Other good there is none. We fancy a perfect good because there are certain rules of action which apply to sets of circumstances comparatively so simple and perpetually recurrent, like telling truth and respecting life, that we confuse the universality of these rules with some special sort of absoluteness and construct an ideal of a perfect good. In analogous fashion point-instants and, what is the same thing, motions are related; to be an unrelated point-instant (absolute rest) is a contradiction and does not exist; it is in fact a contradiction because it is incompatible with the nature of Space-Time. A point-instant is essentially an element of a movement and is between other point-instants. Motion is related to other motion. But each point-instant and each motion is what it is and is in this sense absolute. The bare framework of such absolute order is Absolute Space or Time or Absolute Motion. Again, I leave it to others to judge if this is or is not the meaning of Newton.

From this point of view I may approach the old controversy whether it makes any difference to say the earth goes round the sun or the sun round the earth. To an influential school of thought, headed by the late E. Mach in our day, the difference is one of convenience and economy in description. Neither is truer than the other. Now it is quite true that a motion round the sun may be represented equally well by a motion round the earth. But in doing this we are representing either motion as merely a series of points in space, and omitting the intrinsic time. We are giving, in fact, a purely geometrical account instead of a physical one. Physically the two descriptions are not indifferent. It is, rather, because there is only one physical description that we can find two indifferent spatial descriptions. Let us say then that total Space-Time involves as two elements total Space and total Time, these two being the framework of places and instants within which point-instants (and with them the material or psychical events which occupy them) exist. Each of them is an abstraction from the real world

of Space-Time; not an abstraction in the sense of a mere creation of the human mind, but each of them real under the limitations before described. Absolute Time and absolute Space mean for us only these two elements or factors in the whole, factors which are not juxtaposed but interrelated in the complex history of point-instants.

Having ventured to suggest that absolute Space and Time, interpreted as of total Space and Time, have a very good meaning as understood within the one Space-Time or world from which they never do exist in abstraction, I am impelled in spite of natural hesitation to go further and make some brief remarks upon the philosophical bearing of the current principle of relativity which claims to displace the Newtonian conceptions of Space and Time. Our purely metaphysical analysis of Space-Time on the basis of ordinary experience is in essence and spirit identical with Minkowski's conception of an absolute world of four dimensions, of which the three-dimensional world of geometry omits the element of time. The principle of relativity as enunciated by Mr. A. Einstein is taken up, as I understand the matter, into the body of Minkowski's doctrine. And it would be strange, therefore, if our metaphysical doctrine should be in conflict with it, considered as a mathematical doctrine. The principle of relativity means that the laws of physics are the same for all observers in uniform motion with respect to each other; so that in Mr. Paul Langevin's phrase purely mechanical observations interior to two such systems would not reveal the motion of the systems relatively to each other.<sup>1</sup> The principle was suggested by certain experimental evidence which need not be mentioned here, and it carries with it certain consequences of which, for the layman like the writer, the simplest and, at the same time, the most paradoxical are these. Time, it should be mentioned, is determined by means of clocks whose synchronism is tested in a certain method by means of a flash of light flashed from one clock to the second and then flashed back: the clocks are synchronous when

The Principle of Relativity.

<sup>1</sup> *Le Temps, l'espace, et la causalité*, p. 6. Referred to in note on p. 91.

the reading of the second clock is half the two readings on the first. Now it follows from the relativity principle that two clocks which are synchronous with one another in one system supposed to be at rest will for an observer who moves along with them not be synchronous, and hence events simultaneous to one set of observers are not so for the other set in uniform movement of translation with respect to the first. Secondly, a stick of a certain length lying in the direction of the translation will not be of the same length to the two sets of observers but will shrink for the resting observer in a certain ratio. The conclusion is that Space and Time are entirely relative and vary for each observer.

This is precisely what we should expect on the metaphysical statement (apart from the exact numerical determinations) if different sets of observers have different views or perspectives of the one Space-Time. Each such perspective is perfectly real and in no sense illusory, just as the perspectives we have of solid objects are the object as seen under certain aspects and are perfectly real.<sup>1</sup> The motion of the one system *S'* with regard to the other system *S* changes the perspective for the two sets of observers. Consequently though the material events of sending and receiving flashes of light at two stations are not altered in their relations in Space-Time, they will have different dates in the two cases; for the places at which the events occur will change their dates relative to the observers. In the same way, to take the case of the stick, times appropriate to the ends of the moving stick will occupy different places for the two sets of observers, and the stick will alter in length. There is no such thing as a purely spatial or temporal interval. A distance in space is a system of events, whether it is distance pure and simple or is occupied by a stick. The length of the stick in total Space-Time does not alter, but the dates of its points do, according to the perspective. Only when we forget this does it seem paradoxical to us that the length should vary to different observers. So, too, the retardation of the clock may seem paradoxical, for though we are familiar with the spatial character of Time,

<sup>1</sup> See later, Bk. III. ch. vii.

since we estimate it for purposes of accuracy by spatial marks, as in clocks, yet we forget that these spatial measures are themselves temporal.

The same thing may be expressed otherwise thus. We are dealing in the theory not with point-instants or pure events as such, but with the measurements of Space and Time by means of sensible or material events; in fact, by light-signals. What the theory does is to establish the relations between Space and Time as thus sensibly measured in such a way as to express the persistence in an identical form of physical laws for observers in uniform motion of translation with respect to each other. But this is not in any way inconsistent with there being pure events or point-instants which have their 'absolute' position in Space-Time. To illustrate the point, let me take the conclusion drawn by Mr. Langevin that under certain conditions events may have their order of succession reversed for the two sets of observers; if, that is to say, the distance between the events is greater than can be travelled by light in the time between them. It is inferred that there can be no causality between events at such a distance. But if the time of events were measured by sound-events at comparatively inconsiderable distances, events which are known to be in causal relation would have their succession reversed for observers in appropriate positions.<sup>1</sup>

Now the principle of relativity is a physical or mathematical principle, and is not primarily concerned with metaphysics (or even theory of knowledge, which for me is only a part of metaphysics). But we are concerned here with the metaphysics of it. It would seem at first sight to mean that while the laws of physics are the same for

Its metaphysical bearing.

<sup>1</sup> I do not of course mean slightly that the principle of relativity is a mere affair of measurements, but rather that measurement when you press it to its ultimate foundations always implies the introduction of time considerations into spatial quantities and space considerations into temporal quantities. This is a matter of the highest importance, and it is of a piece with the principle that a space without its time or a time without its space is a fiction. This second point is what I miss in Mr. Broad's treatment of the subject of relativity in his Appendix (*Perception Physics and Reality*, Cambridge, 1914, pp. 354 ff.), from which I have learnt much on the relation of the principle of relativity to measurement.

every observer, each one has his own Space and Time and lives in that world. But if that conclusion is drawn, and I do not feel sure that it is, the relativist seems compelled philosophically to go beyond his own Space-Time and arrive at a total Space-Time in our sense. It is sometimes said that the very reasonings which establish the relativist results (those paradoxes which are so beautifully natural) presuppose and postulate an absolute world; but I cannot find that this can be maintained. But they certainly seem to me to lead on to it. For the different sets of observers compare notes, or if they do not, the mathematician who supplies the formulas of transformation whereby equations expressed in the co-ordinates of one world can be expressed in the co-ordinates of another world, thereby contemplates a world in which the worlds of the two sets of observers are unified. Moreover, even within one world the various persons who read the clocks are supposed to communicate with each other, and they are not the same persons and may have a slightly different perspective. The only way in which the conclusion from this comparison of the observers at least in the two systems (to say nothing of observers within each system) can be turned is by the reply that the formulae are numerical and independent of Space and Time. For reasons which I cannot at present explain, I should regard this answer as unavailing, because number is itself dependent on Space and Time.

Thus the position metaphysically of the relativist is apparently one of solipsism, or rather the same question is raised as in solipsistic theories of knowledge. Solipsists, as has often been pointed out, could not talk to each other. Moreover, as Mr. Bradley has shown, a solipsist at one moment could not talk to himself as he was at a previous moment; he would have no continuous self. Now all such metaphysical difficulties are avoided if we start with the empirical fact that we do communicate with one another about a common world which each sees from his own view, and moreover that each remembers himself. If relativism means philosophically (and I repeat that I do not know that it does mean this) that

Space-Time for each observer is his own, it inevitably leads on to a total Space-Time which combines these worlds.

I venture, therefore, to suggest that the importance of the doctrine does not lie in any supposed annihilation of absolute Space-Time as understood in the sense explained here, but in two other respects. Of the first a philosopher can judge. It is the truth that the world is not a geometrical but a physical one, and that Space and Time are indissoluble. This seems to me a result of the last importance and fundamental to metaphysics. The second is the exact determination on the basis of experimental evidence of how formulae are to be transformed in the case where one system moves in uniform translation with respect to another system. Such transformations are required in the Newtonian mechanics, but the contention of relativists is that they are only a first approximation. Later knowledge shows the transformations to be less simple.<sup>1</sup> If this contention is well established, and this is a matter for physicists and certainly not for me, the principle means a vast advance for physics itself over and above the fundamental reconstruction of the relation of Space and Time. But whatever modifications it introduces into the Newtonian mechanics it leaves Time and Space and Motion in their ancient reality, or rather it leaves us still with Space-Time in itself as a total from which perspectives are selections; and therefore in that sense absolute and independent of the observers. And I do not feel sure that any relativist would object to this in a metaphysical sense. Time and Space in their ancient pure reality remain as the *framework* of history, and the new doctrine is a new doctrine of their sensible measures.<sup>2</sup>

<sup>1</sup> Possibly this new system may not be final. See this suggestion as made by Mr. Langevin, p. 27, "Peut-être des expériences nouvelles nous obligeront-elles à retoucher le groupe de Lorentz, comme nous venons de retoucher le groupe de Galilée," and Mr. Silberstein (*Theory of Relativity*, London, 1914, p. 108).

<sup>2</sup> There is a very serviceable statement with very little mathematics of the relativity doctrine by Mr. Langevin in the *Bulletin de la Société Française de Philosophie*, 12<sup>me</sup> Année, No. 1, Jan. 1912, whose language I have several times used. (See also his paper in



'Report of 4th international philosophical congress at Bologna,' 1911, vol. i. p. 193, and in *Revue de Métaphysique*.) I quote some words of his used, not in the paper but at the close of the discussion which followed it, p. 43. "We must conclude to the existence of a new reality, the Universe, of which the Space and Time particular to a group of observers are but perspectives, more immediately given, but relative and variable with the movement of the system of observation." One of the speakers in the discussion of Mr. Langevin's paper suggests, only in order to disavow it, the idea I have used of different perspectives of a solid object. I imagine the disavowal to be based on the belief that such perspectives are therefore illusions, instead of being as they are realities and physical realities. See later, Bk. III. ch. vii. and Mr. Russell's treatment of perspectives in recent works.

The memoirs of Messrs. Lorentz, Einstein, and Minkowski are now conveniently collected in a single volume, *Das Relativitätsprincip*, Leipzig and Berlin, 1913. On p. 58 above I have omitted to mention the name of the late P. Fitzgerald along with these writers.

## CHAPTER III

### MENTAL SPACE AND TIME

By mental or psychological time I mean the time in which the mind experiences itself as living, the time which it enjoys; by mental space I mean, assuming it to exist, the space in which the mind experiences itself as living or which it enjoys. They are contrasted provisionally with the space and time of the objects of mind which the mind contemplates. I hope to show on the strength of experience that mental space and time possess the same characters and are related in the same intimacy of relation as physical Space and Time; that the time of mental events is spatial and their space temporal precisely as with physical Space and Time, and further that mental time, the time in which the mind lives its life or minds its mind, is a piece of the Time in which physical events occur; and similarly of mental space. In many respects it would have made the task of analysing physical Space and Time in the preceding chapters easier if, following the method of the angels and assuming mind to be an existence alongside of physical existence, I had examined first the simplest elements in mind rather than in physical objects, and with the results of the analysis of the familiar thing mind, had passed to the analysis of the less familiar external world. But I felt myself precluded from this procedure because it would have meant before approaching physical Space and Time that we should need to accept two very disputable propositions, first that the mind is spatial, that is, is enjoyed in space, and second, that this enjoyed space is at any instant occupied not merely by the mind's present but also by its enjoyed past and future.

Intro-  
ductory.



Accordingly I have endeavoured to examine physical Space and Time without encumbrance by these difficulties.

Mental  
time part  
of the  
same Time  
as physical  
Time.

That the mind as the experienced continuum of mental acts (the nature of what underlies this continuum is a subject for later inquiry) is a time-series, and in that sense is in time, or has Time in its very constitution, would be admitted on all hands. By continuity is meant mental or felt continuity, so that, by memory or other means, in a normal mind no event occurs which is disconnected with the rest. There may be intervals of time, as in sleep without dreams, or in narcosis, when the mind apparently ceases to act: "the mind thinks not always." But consciousness, as William James puts it, bridges these gaps, so long as it is normal, and it feels itself one. The elements of this continuum are conscious events or processes. There is no rest in mind but a relative one. We only think there is, because with our practical interests we are concerned with the persistent objects—the trees and men, which we apprehend in what James calls "substantive" conditions of mind. If we overlook the transitions between these objects, their repugnances and likenesses, how much more easy is it to overlook the transitions in our minds, the feelings of 'and,' and 'but,' and 'because,' and 'if' or 'like'—the "transitive" states. We catch them for notice when we happen to be arrested in our thinking, when we leave off, for instance, in a sentence with a 'because,' when the forward and defeated movement of the mind is directly made the centre of our attention.<sup>1</sup> The sense we have in such cases that the flow of our meaning is stopped is accompanied by caught breath or tense forward bending of the head or other bodily gestures, but it is not to be confused with the consciousness of these gestures. They are but the outward bodily discharge of the mental arrest. It is these transitive conditions which betray the real nature of the mind. The substantive states are but

<sup>1</sup> There are many happy examples in Humpty Dumpty's poem in *Through the Looking-Glass*: "I'd go and wake them, if—", "We cannot do it, Sir, because—"

persistence in movements which have the same character and correspond to objects of the same quality. In itself the mind is a theatre of movement or transition, motion without end. Like all other things it has the glory of going on.

But not only is mind experienced in time, but the direct deliverance of our consciousness of external events is that the time in which we enjoy our mind is part of the same Time in which those external events occur. It is only when philosophy steps in with its hasty interpretations, that we can say that Time belongs, as Kant believed, to external events because they have a mental or internal side in our experiencing of them. On the contrary, to be aware of the date or duration of physical events is the most glaring instance, derived from direct experience, of how an enjoyed existent and a contemplated existent can be compresent with one another. In this case the compresence is a time-relation which unites both terms within the one Time (I am assuming, let me remind my reader, the hypothesis of direct apprehension of the external object). In memory or expectation we are aware of the past or future event, and I date the past or future event by reference to the act of remembering or expecting which is the present event. An event five years past occurred five years before my present act of mind. We have seen, in fact, that physical Time is only earlier or later, and that the instants in it are only past, present, or future in relation to the mind which apprehends. Now without doubt, when I remember that a friend called at my house an hour ago, I mean that that event occurred an hour before my present condition of myself in the act of remembering that event, and that the mental and the physical event are apprehended within the one Time.

Only in regard of present physical events does doubt arise. We are accustomed to call those physical events present which are contemplated by us in sensory form in the present moment of consciousness. Now it is certain that the physical events which I contemplate precede by a small but measurable interval my sensory apprehension of them, and this is true not only of events

outside me but of the events in my body which I describe as occurring at the present moment. They are all anterior to my apprehension of them. But this is not the deliverance of unsophisticated experience, but a fact which we learn about our process of perceiving external events, and is not given directly in our acquaintance with them. Ask an untrained man whether the events which he sees occur at the same time as his perception of them, and he is merely puzzled by the question. For him the present events are those which he perceives, and he has not asked himself, and does not understand, the question whether they really are simultaneous with the perceiving of them or not. Further experience of a reflective sort, experimental experience of the times of reaction to external objects, shows him that they are not. But equally he may find by reflection or scientific methods that the event he remembers as occurring an hour ago occurred in reality an hour and five minutes ago or longer. Thus the philosophical question of the precise time-relation between our perception and its objects does not arise for us in practice. It remains true that all our mental events stand in some time-relation, whether rightly apprehended or not, to the contemplated physical events. The enjoyed mind is compresent in a time-relation with those objects. This is the whole meaning of a time-relation in which the terms are not both contemplated, as they are when we are dating two physical events with reference to one another in physical Time, but when the one is contemplated and the other enjoyed. That the mental duration or instant stands thus in relation to the contemplated instant in time shows, then, so far as experience directly gives us information, that the times of both terms are parts of one Time.

From this mere vague experience that I who enjoy am in Time along with the event contemplated which is in Time, we may easily pass to a more definite statement. We may date the physical event with reference to the physical events going on in my body at the 'present' moment. Then I am contemplating a stretch of time between the event and me (I may even, as we shall see

later when we come to discuss our memory of the past, *enjoy* the interval between me and my apprehension of the physical event). At a later stage in my experience, when I have learnt that my mental act occurs really at the same time as a certain physiological process which corresponds to it, I may contemplate the time-interval between that process and the cognised physical event, and then we have a still exacter notion of the time-relation, but clearly one which is only possible for more advanced experience and not given in the mere cognition, in the mere memory, for example, of my friend's visit an hour ago.

Turning to Space, we find that mind enjoys itself spatially, or is extensive, in the same sense as it is successive and endures in enjoyed time. But while it is admitted that mind as experienced is in time, the proposition that it is extended meets with direct and even contemptuous opposition. Partly the repugnance is moral; it seems to some to savour of materialism. Now if materialism in philosophy were forced upon us by inquiry we should have to make our account with it and acquiesce. Nothing can in fact be further from the spirit of the present investigation, as the whole issue of it will demonstrate. But even now it is plain that if mind is spatial like matter, Space is as much in affinity with mind as it is with matter and the fear of materialism is groundless. The other objection arises from the mistaken belief that a spatial mind must be apprehended like a spatial physical object. This, however, would be to imagine that the mind is asserted to enjoy itself in contemplated Space; whereas the assertion is that mind enjoys itself in enjoyed space, and we shall presently see that the space which we enjoy as occupied by our minds may also be contemplated as occupied by a physical thing. Bearing this proviso in mind, turn to experience itself. My mind is for me, that is for itself, spread out or voluminous in its enjoyment. Within this vague extension or volume the separate and salient mental acts or processes stand out as having position, and 'direction.' My mind is streaked

Mental  
space and  
physical  
Space  
belong to  
the same  
Space.

with these more pungent processes, as when a shoot of painful consciousness is felt or a sudden thought produces a new distribution in this extended mass. These streaks and shoots of consciousness have the vaguest position, but they have it, and such position and direction are most clearly marked in the higher acts of mind, imagination, or desire, or thinking, and especially when there is a change in what we call the direction of our thinking. There is verifiable truth in the words of Tennyson "As when a great thought strikes along the brain and flushes all the cheek"; though he has described the enjoyed direction in terms of its position in contemplated Space.

Thus just as we enjoy a time filled with mental events, so we enjoy an extension or space filled with mental events. Further, as with time, so here the deliverance of experience is that in apprehending physical extension, say a physical object in space, we are aware in our act of enjoyment of an enjoyed space as related to the extension of the physical object within the one Space. Our mental space and our contemplated space belong experientially to one Space, which is in part contemplated, in part enjoyed. For all our physical objects are apprehended 'over there' in spatial relation to our own mental space. This is evident enough, when once the terms are understood in the case of sensible apprehension of objects in space. The contemplated and the enjoyed spaces are in spatial relation, though distance is only vaguely apprehended as somewhere there away from me. But what is true of perception is true also in imagination. The contemplated space is now only imagined, but it is still somewhere there away from me. Once more I cite Tennyson. The words on Gordon "Somewhere, dead, far in the waste Soudan" illustrate the relation of enjoyed to imagined space, both of them being equally real space, though their distance if vague in perception is still vaguer in imagination. I will add two less simple examples which I have used elsewhere.<sup>1</sup> Let any one who at all possesses sensory imagination think of the lines

<sup>1</sup> *Mind*, vol. xxi., 1912, 'On relations.'

The same that oft-times hath  
Charmed magic casements, opening on the foam  
Of perilous seas, in fairy lands forlorn;

and ask himself whether he is not conscious of the object described as somewhere in Space along with himself, that is, does not enjoy himself in an enjoyed space, along with an object somewhere in contemplated Space. Here the Space is the Space of fancy, of fairyland. Or let him try the same experiment on

The antechapel where the statue stood  
Of Newton with his prism and silent face,  
The marble index of a mind for ever  
Voyaging through strange seas of thought alone,

when he will enjoy himself in space, not only along with the statue of Newton somewhere there in Trinity College, Cambridge, but also with the strange seas over which Newton's mind is supposed to be travelling, the world of contemplated things before Newton's mind.

In saying that when I imagine an object I locate it somewhere in the same Space wherein I enjoy myself, I do not mean that I locate it somewhere in front of my eyes.<sup>1</sup> On the contrary, I locate it in the place in Space to which it actually belongs. If it is the image of the Soudan I locate it in the south of Egypt. For the imaged Space is but perceived Space as it appears in an imaged form. All images of external objects are themselves spatial in character, and their parts have position relatively to each other. But also they have position in the whole of Space so far as we imagine the rest of Space. Now images are for the most part isolated objects,

The place  
of an  
image.

<sup>1</sup> I believe that I have said so in one of my papers. From this disloyalty to my own principles I was saved by the admirable treatment of this subject in Mr. E. B. Holt's *Concept of Consciousness* (London, 1914), chap. xii. pp. 230 ff. I borrow from him the statement that the image taken by itself has no position at all. But I doubt if an image ever is cut off completely. And so I persist in holding that the image of a town belongs to the actual place of the actual town, only of course under the indistinctness and falsification which attach to any imagination. The matter becomes clear only at a later stage when we come to speak of illusions and imagination. See in particular the mirror experiment described in Bk. III. ch. vii.

cut off more or less completely from their surroundings, and so far as this is the case the image as a whole cannot be said to have position at all. But directly we ask where the image is we begin to supply in image the rest of Space. Thus if I can remember the map and bear in mind the way I am facing, I image the Soudan more or less accurately where I know it to be, or in other words where it actually is. The place of an image is its position in imaged Space, and according to the fulness of that imagination will its place be determined accurately or become so shadowy as almost to vanish. How the place in imaged Space is correlated with the place in perceived Space which is imaged in imaged Space, is discovered by experience, as for example, to take a very simple case, I recognise that the image of a person in front of me when I first look at him and then shut my eyes belongs to the same place as the percept of the same person. When the image is not the image of anything actual its place in actual Space is of course not actual either. This only means that the object imaged is not actual in the form which it assumes. It purports to have a place in Space, which is not actually filled by any such object. The Space which is imaged is still the same Space as is perceived, but it is occupied with imagined objects. Further discussion of the problems thus suggested belongs to a later part of our inquiry.<sup>1</sup>

Place of  
mental  
space.

But this vague experience of interval in space between myself and the place of physical objects in space becomes more definite when I ask where is my mind and its enjoyed space in the whole of Space. I cannot ask where I am in enjoyed space, for the space and time I enjoy are the whole of enjoyed space and time. I can date a mental event in my past; and I can dimly localise a mental event in my space: I can distinguish the outstanding point, or if it is a connected event, the streak in my space which it occupies. But when I ask when I occur in Time as a whole I answer by reference to some physical event in my body with which I am simultaneous. When I ask

<sup>1</sup> Bk. III. ch. vii.

where I am in the whole of Space I answer by reference to my body. My mind is somewhere within my body, or within my head, or when I have acquired knowledge about my central nervous system it is for me recognised as being *in the same place* as that system or more specifically as the brain or some part of it. In this way I localise my mind in Space by recognising it as occupying the same place as some physical object. Now this is our constant and early acquired experience. I feel myself somewhere in my body or more particularly in my head. I am now contemplating the whole of Space and localising my enjoyed space in the same place as a contemplated object my body; just as I localise myself in time in the same part of physical Time as is occupied by my bodily 'present' events.

All this will seem to some to be founded on an elementary blunder of confusion between the locality of consciousness and the sensations derived from the scalp or the movements of the eyes. All our mental life is accompanied by these experiences, and when we talk of enjoyed space we are thinking of and misinterpreting what we learn about our head. And this kind of localisation is an arbitrary matter. Did not Aristotle regard the mind as seated in the heart, and the brain as merely a cooling apparatus to the heart? He attended to the cardiac region, we to the head and brain. The case of Aristotle is really not damaging to our contention as it seems, but rather supports it. For though Aristotle is so far removed from us in time, it may reasonably be supposed that like us he felt his headaches and fatigue of attention in his head. If then he still located his mind in the heart, he must have done so, not because he was guided by direct experience of the parts most affected in mental process but from imperfect anatomy. His mistake is therefore irrelevant.

But, Aristotle apart, there is a clear distinction in experience between the contemplated *sensa* (or objects of sensation) belonging to the body and the movements of consciousness itself. In my own case a change of thought is nearly always accompanied by sensations of movement



in the eyes; but I distinguish these from the acts of thought. The consciousness of colour is different from that of eye-movement, and is particularly easy to distinguish from it because vision is not localised in the body like touch, but projected. I see a colour in the external coloured object but I do not refer it (I mean in my plain experience, apart from theories) to the eye. In localised sensations like touch, the bodily object, say the hand, does intrude into the felt pressure, and so it is easier here to imagine that when we speak of the enjoyed place of a touch sensation, we are thinking of the place where the touch occurs. But even here it is possible to get a faintly accentuated experience of the movement of consciousness in sensing a touch as distinct from the actual sensum or pressure of which we are conscious. This is best done when there are two distinct sensa in the mind at once, as when, leaning against an armchair, one is seeing a bright light. There are then two differently localised movements of consciousness. Thus in the first place we may distinguish the course of the thoughts from the accompanying bodily sensations. And in the next place in sensation there is besides the sensum (the object sensed) the mental act of sensing it, and it is this, not the other, which is enjoyed. Thus it cannot be because we have sensations from the region of the head that we assert our experiencing of external objects to be located in enjoyed space within the head. For the same problem arises with regard to these sensations from the head, it is their objects which are in the contemplated head; the enjoyments of apprehending them are in an enjoyed space, whose place is identified with the place of the head. It is indeed difficult, if not impossible, to understand how we could ever correlate a particular mental process as we do with a particular neural process possessing its contemplated or physical character, had not mind already its own spatial enjoyment. The correlation, if that is the right term to use, is the identification of an enjoyed space with an observed or contemplated one.

The identification of the place of mind with that of

the body which begins by locating the mind roughly within the body and ends by the more accurate correlation of mental with physiological processes within the central nervous system is not mere matter of theory but is derived from empirical experience; and experience which in its earlier stages is of a quite elementary character. It is an essential part of the history whereby we become aware of ourselves as a union of body and mind, a body organic to a mind, a mind whose functioning is conditioned by a body. I shall call this union of mind and body the person. In every stage of the growth of our self or person two elements are palpably present, one the body and the other the subject or consciousness. Sometimes it is the body which is predominant, as when I say I have a headache or a cold and do not feel quite myself; sometimes it is the subject or mental factor, as when I say I am most myself when I let myself go dreaming by day, or I never feel like myself when I am doing something so distasteful as reading examination papers or books of travel, or that I wish myself "like to one more rich in hope." In the first case myself is an embodied self, in the second it is the inner self, the self which thinks, desires, imagines, wishes, wills. The most developed stage of the person is the personality, the persistent stable organised set of habits of action, thought, and feeling by which I am to be judged, by which I stand or fall. I say, for instance, I was not myself when I lied or cheated. The person is in the first case mainly a body, in the second it is mainly something psychical, in the third it is something spiritual. The two elements are, however, traceable everywhere in the history; the one the body, what Locke called the man, the other the subject, the element of consciousness itself.<sup>1</sup>

The bodily self or person is the one with which we are chiefly concerned. We experience it in the form of organic and motor or kinaesthetic sensations as well as the special sensations of touch, sight, or other sensations derived from the body itself. The body is a percept, in

Localisa-  
tion of  
mental  
space; how  
effected.

Subject and  
object self.

<sup>1</sup> For fuller treatment see 'Self as Subject and as Person' (*Proceedings Aristotelian Society*, 1910-11, vol. xi.).



which various *sensa* or sensed elements and corresponding ideational elements are revealed. It is like other external things a synthesis of these various *sensa*, some felt, some suggested. But the bodily self or person is never the body alone but the body with the apprehension of it. It is the experienced body along with the experiencing of it, these two forming a whole. This bodily self is the nucleus of the later stages of the self; but it is only the person with its two elements which could thus serve as their foundation, and not the body alone. How intimately the bodily experience is involved in the inner self or in the personality is easy to recognise. For motor sensations in a very high degree, and organic sensations as well, are present in all the higher life of thought, emotion, and will, and sustain that life and give it richness and resonance. Thinking is not, indeed, identical with the tense movements and strains of attention, but it is sustained by them, and the emotions without organic sensations and the other sensations of the expression of the emotion would be like an old vintage of port wine which has lost its colour and 'body.' Even where these elements are less apparent they betray themselves to closer inspection. When I feel myself ill at ease, or not myself, in the company of a person whom I dislike, what may be uppermost in my mind is the hindrance which his presence offers to the free working of my inner thoughts and wishes. But I may soon discover that these impediments to my spiritual activity mean also restriction of my motor freedom, or other reactions of bodily uneasiness. I recognise here that I am both spirit and body, and the one will not work freely without the other. Other facts of the normal and the abnormal life of mind supply additional and familiar evidence. Changes and disturbances in the organic and motor sensations or, apart from them, in the organs of sense and connected parts of the body, though we may not be aware of them through means of organic or motor sensations, may and do alter the tone and build of the whole personality. Such changes occur normally at the climacteric epochs of life, like the time of teething or adolescence. In abnormal cases, failures in

organic or tactual or visual sensibility, or any functional breakdown, may be an important factor in violent alterations of temper and thought, or even lead to division of personality.

The difference of the bodily stage of the personal life and the higher stages is in fact mainly one of emphasis. We are absorbed in the practical urgency of our bodily needs and changes and the subject-side of the self does not stand out in our experience. Even in ideation or volition, it is still the things we think about, or imagine, or desire, which interest us most. If we were confined in our inner life to the sensations we have from external objects we should still have an inner life, but should hardly notice it. But imagination, and, above all, willing and desiring, which go on in the absence of sensory objects corresponding to our ideas, begin to bring the mental action as such into relief. Even then it may be doubted whether the inner life of the subject would be attended to for its own sake were it not that in the intercourse with other persons, to which we chiefly owe the unfolding of the personality proper, we are thrown back upon ourselves by the effect of contrast, or imitation, or co-operation or rivalry, and we become definitely aware of ourselves as subjects of experience. It is then we can begin to see that even in sensation it is we who have the sensations, and it is then that the conditions arise for the birth of the science of psychology.

The higher self is thus in all its stages a continuation and expansion, and refinement of the bodily self. The body, it may be observed, is capable of indefinite extension. We feel the ground at the end of the stick we carry, not at the finger which holds the stick: the stick has become part of our body. So may anything in contact with our bodies; like our dress, injury or offence to which we resent as we do offences to our body. All this has been described by Lotze in a well-known passage.<sup>1</sup> But my 'body' may include things not in contact with me, or indeed any of the external objects I am interested in—my room, my

<sup>1</sup> *Microcosmus*, 'On dress and ornament,' Bd. ii. pp. 203 ff. Engl. transl. vol. i. pp. 586 ff.

books, my friends, and all the things I care about, philosophy or psychology, which are systems of knowledge, the works of Plato, the history of my country. All these things may become extensions of my body and the experiences I get from them may be for a time of a class with my organic and other bodily sensations. The self, if I may quote a happy phrase of Mr. Henry James in one of his novels, "overflows into" these objects. Damage to my property, or disaster to philosophy or my country, is like a blow in the face. I may in certain moods feel myself one with the universe: the universe has become part of my body. Many or most of these extensions of the body are only possible to a life which has gone far beyond the interests of the body itself. But still these higher objects of interest may become as intimately organic to me as my proper body. This is the interpretation of that exchange of the self and the not-self which has sometimes been thought to demonstrate the ultimate unreality of the self. The not-self becomes part of the self and I may even turn myself outside me so that it becomes part of the not-self. Yet the not-self in such cases never becomes part of the subject nor the subject part of the contemplated world. I may take external things into my body or loose my body into the external world. But it is but a shifting of the borders within which I have the experience of intimacy or organic connection. My body may expand to include the world or it may shrink and be lost in a remote and independent system of things outside me.

Subject and  
body re-  
ferred to  
same place.

The bodily person is thus the type and beginning of all forms of the self, and we may return to the question of the experience by which in the self the subject and the body come to be apprehended as unified into a whole or person, which is more than a mere aggregate. Their unity is known in its simpler stages through very elementary experiences. In the first place we have the direct identification of the place of mind and body. The enjoyed space of the one is identified with the contemplated space of the other in precisely the same way as we identify a colour as occupying roughly the same space as a hardness or a tone, or as we identify again roughly the place of an

organic sensum of, say, cramp in an area of the skin with a touch sensum in that area of the skin. In both these cases we have two external objects localised within the same contour. In the case we are considering we localise the mind and the body within the contour of the body and declare it to be in the body or even more narrowly in the head. There is no difference in the two cases except that one of the things whose space is identified is spread out in enjoyed and not in contemplated space. This identification is accomplished experientially. Moreover, we do not necessarily refer the consciousness always to the place of the body, we may refer the body to the consciousness as being in part of it in the same place. Here too we have a parallel in external experience. Pain in the toe is an organic sensum and the toe itself is seen. But W. James has said with as much truth as wit that when a baby feels a pain in its toe it is really feeling the toe in the pain. Now the pain, though a sensum and not a mere feeling of painfulness, is notwithstanding more personal, nearer to mind than the seen toe. It is but a step from this to identifying the seen space of part of the body with the enjoyed space of the mind. Mental events and bodily events are thus realised to belong to one place, and we may add by similar considerations, roughly speaking, to one time. Mind and body are *experientially* one thing, not two altogether separate things, because they occupy the same extension and places as a part of the body.

Besides this direct spatial identification, the union of mind and body is experienced by us in the bodily movements into which the mental response to external things is continued. The mental process of perception of the apple is continued into the movement of seizing the apple, which movement in its turn is perceived. Moreover, there is a difference in these responses with the difference in the mental processes—with their more or less vaguely experienced differences of locality within enjoyed space. In securing its ends the mind's actions issue into appropriately distinct bodily actions. The body is experienced as an instrument of the mind.

Mental  
process con-  
tinued into  
bodily  
movement.

This is true not only in the life of the senses and appetites, but also in the life of intellect. We experience that these activities issue in bodily movements which sustain them and affect the external world, were it only in the form of speech. Thus the person is experienced as no mere aggregate of mind and body, because these have place (and time) in common and their movements are in experienced connection. And all the facts before referred to which indicate how changes in the one determine changes in the other come in, when the person reflects, to swell the tide of evidence flowing in that direction.

The map  
of mental  
space.

So much, except for such phrases as imply a slightly more extended knowledge or reflection, may be taken as describing the ordinary history of how mind and body come to be recognised as connected; and it is compatible with different hypotheses as to the ultimate nature of that connection. That experience teaches us that the mind is somewhere within the body and is felt in particular within the head; and it answers roughly the question, Where is the enjoyed space of mind in the whole Space which is contemplated? But from what we learn about our own bodies and from the bodies and, above all, the brains of others, we are able to establish a much more detailed and intimate connection between mental processes and physiological ones. Let us assume for shortness that consciousness is conditioned by physical events in the cerebral cortex.<sup>1</sup> This must not be taken to mean that there is some place in that cortex at which the mental event is located, as if the rest of the brain or the central nervous system were indifferent. No conception could be so naïve. Rather what is meant is that certain processes occurring in specific parts of the cortex are so vital for a particular sort of mental event that unless the affection reached this part

<sup>1</sup> Written before the appearance of Dr. Head's recent paper in *Brain*, xli., 1918, on 'Sensation and the Cerebral Cortex.' (Cp. later, Bk. III. ch. vi. Suppl. Note.) The precise localisation of mental process is, however, indifferent for our purpose here.

of the cortex the mental event would not occur. We learn then that specific consciousness such as vision is correlated with specific movements in the occipital region of the brain. Plainly this kind of knowledge is not direct experience of my own vision or of its relation to the brain. For it is a commonplace that in seeing a tree I know nothing of the occipital movement, and when I think of the occipital movement I am not seeing the tree. But it is knowledge *about* my own vision, and extends my experience of vision, for when I see I can think of these processes in my own brain, in ideal contemplation, and when I think of them I can think of vision in ideal enjoyment. Having learnt from other brains what underlies vision I can use that knowledge to understand my own.

Now if we accept the commonly held results of correlation between specific mental acts and specific neural processes, we arrive at a much closer conception of how the psychosis is related to the neurosis. Instead of roughly feeling our mind within our heads we can think of a psychosis as occupying the place of its correlative neurosis. Once more no particular theory is here implied of the ultimate connection of psychosis and neurosis. The doctrine that they are correlated or even parallel, regarded as a bare compendious statement of facts, is sufficient for our purpose. There may be interaction between mind and brain; there may be, as indeed I believe to be the case, identity of psychosis with its own neurosis.<sup>1</sup> But this is not necessary here to affirm. Those who think that secondary qualities like colour and sound interpenetrate, that is, are found in precisely the same place, may well believe that a psychosis may occur in the place of a neurosis and yet be something distinct from the neurosis. We have made no such supposition as to the coincidence of a colour and a smell, for we have only supposed them to coincide in the rough.<sup>2</sup> The question may be left open and we may be content with the hypothesis founded on cerebral

<sup>1</sup> See later, Bk. III. ch. i. A.

<sup>2</sup> See later, Bk. II. ch. vi. A, p. 275.

localisation that mental events, with their specific enjoyed place, are in the very contemplated place of their neurosis. This is a mere extension of the experienced rough identity of place between mind and body.

This picture of our neural space is painted by inference. But it enables us to derive two results. First it substitutes, as said, for the vague blur of enjoyed space a map of that enjoyed region, and we can attach a definite meaning to the proposition that our mental states are enjoyed as having place and direction. So far as any one mental process is defined against the general mental background, its direction is that of its specific anatomical or physiological path. The direction is defined within the brain itself and it does not change if I alter the position of my body by turning round. For my brain, or at least my central nervous system, is the whole region which I can experience in enjoyment. I am my own microcosm so far as enjoyment goes. When I turn round, my brain processes may change their direction according to the compass used in contemplated Space, but not in relation to my brain as taken by itself. The orientation of its constituent movements does not change when the orientation of the contemplated brain changes in the rest of contemplated Space. It is therefore irrelevant if any one objects that a mental direction would vary with every movement of my body.<sup>1</sup>

Some of these anatomical or physiological paths are occupied by present states of mind; some of them by

<sup>1</sup> I may note here that the direction of a mental process is thus understood by me literally, in its spatio-temporal sense. Sometimes it is said, and I have myself on various occasions said, that in any act of cognition, e.g. in seeing a tree or colour, the mental act is directed upon the object contemplated. I suppose it is this which may have led to the criticism that the direction of a mental process alters with the position of the head. But direction is understood in these other statements metaphorically, as when we speak of directing our attention to an object. It means strictly in such phrases little more than being concerned with, and expresses the correlation of the mental act with its object, the parallelism of mental act (or its neural process) with the external object with which it is in my language com-present. (See later, Bk. III. ch. i. A.)

the mental states which are the enjoyments of remembered or expected objects, that is, which are in ordinary language memories or expectations of ourselves. Not all of our brain is necessarily at any one moment occupied by mental events, except so far as the whole brain may be needed to function in order that there may be specific functioning of any one path within it. This apparent lapse or abeyance of mental action in certain parts of our neural system raises a problem. But we need not discuss it now. The fact is that not every part of our brain is mentally effective at once: we may see without hearing.

Secondly, with our picture before us, we can begin to understand better the connection of enjoyed space and time. For mental events are processes in time and occupy our enjoyed space, and different mental events are connected together either as contemporaneous with or following one another within this space. Hence in this microcosm of enjoyed space and time, that is, enjoyed time, is laid out in space, primarily in enjoyed space but also in the contemplated space which is identical with it. It is therefore no mere metaphor or illusion by which we represent the passage of mental life in time by spatial pictures. For now we recognise that in fact mental time enjoyed in mental process occupies space, or like physical Time it is experientially spatial.

Mental  
space-  
time: the  
problem.

So far we can see; but what we learn is little more than a recognition that mental processes which occur in time, and which are related in time-relations, occupy space. But to go further requires us to determine the relation of the time of the mental process, that is, the enjoyed date, to the time of the physiological process which corresponds to it. This is a matter which presents great difficulty. Strangely enough, though we accept at once the proposition that the mind is in Time and with difficulty the proposition that it is in Space, yet it is easy to see that if the mind is in Space the place of a mental process is identical with that of its brain process, but the



question, Are their times identical or not? seems to us half unnecessary to ask and exceedingly difficult to answer. The reason is, that the time of a present mental event is clearly and palpably itself the date from which we reckon Time, and we need to ask no more about it. But we can only give definiteness to the place of a mental event by correlating and identifying it with the place of some contemplated event.

Let us state the problems before us more distinctly. I am at this moment seeing a colour and hearing a sound. The corresponding parts of the brain in the occipital and the temporal regions are excited at one and the same time: certain phases of the movements are contemporaneous. But suppose that while I am at this moment seeing a colour I am remembering part of a friend's conversation in which the predominant images are auditory. The corresponding enjoyments which occupy my brain are the present enjoyment of the colour, that is, the seeing of it, and the renewal in memory (I purposely leave the phrase vague) of the hearing of the conversation. Is that renewal by way of memory wholly a present enjoyment? If so, then, since the like would apply to expectations, and my mind is filled with present thoughts, images, rememberings, and expectations, my brain would be occupied at this moment by a mass of present enjoyments. The time of an enjoyment would be identical with the time in contemplated Time of its corresponding neurosis. Since the time of every part of the brain corresponding to mental action would be the same, we should have in mental space an exception to what we have learned of contemplated Space, that it is primarily not all simultaneous. We are forced, therefore, to ask ourselves whether the time of a mental enjoyment is always that of its underlying neural process, or in other words whether a remembered enjoyment is not itself a past enjoyment, not a present one. We shall find, strange as the statement may seem, that this is the truth. But the inquiry cannot be an easy nor a short one.

## CHAPTER IV

### MENTAL SPACE-TIME

LET us for the sake of clearness begin, not with the memory of ourselves, but the memory of objects, that is to say, of things or events which we have experienced before, and in remembering are aware that we have so experienced them. This is the fully developed kind of memory, to which other acts of so-called memory are only approximations. James writes:<sup>1</sup> "The object of memory is only an object imagined in the past (usually very completely imagined there) to which the emotion of belief adheres," and in substance there is little to add to this statement. I prefer to say the object of memory (what I shall call 'the memory' as distinguished from the mental apprehension of it, which is 'remembering') is an object imagined or thought of in my past. I say 'my past,' for I may believe in the assassination of Julius Caesar as a past event without being able to remember it. The object, then, is before my mind, bearing on its face the mark of pastness, of being earlier than those objects which I call present. In the mind there corresponds to it the act of imagining or conceiving it, and there is in addition the act of remembering it, the consciousness that I have had it before.

The pastness of the object is a datum of experience, directly apprehended. The object is compresent with me *as past*. The act of remembering is the process whereby this object becomes attached to or appropriated by myself, that is, by my present consciousness of myself which has been already described, in which may be distinguished

<sup>1</sup> *Psychology*, vol. i. p. 652.



a subjective and a bodily element unified in the person. The past object is earlier than my present act of mind in remembering, or my equivalent bodily state, whichever may happen to be more predominant in my mind. When the past object is thus appropriated by myself I am aware of it as belonging to me, as mine, as occurring in *my* past. This is the consciousness that the object is remembered. In precisely the same sense as I am aware of a perceived object when I have before me a sensory experience, I have a memory when I have before me an experience of the past and appropriate it to my personality. The object is then not only past but belongs to a past in which I contemplate myself (that is my body) as having been existent also and related to the object.

No reference to the perceived.

In this as in many other psychological inquiries, error may arise from reading into the experience more than is there. The actual past event as we once perceived it is remembered as the memory of it which has been described. I may not say that in memory I am aware of the memory as referred in thought, or in some other way, to the actual object I once perceived. It is true that I can in reflection, in a sophisticated mood, so speak. But this is not the deliverance of the experience itself called having a memory. For example, I may see a man and remember that I heard his conversation yesterday. Here I have the actual man before me; but my memory of his conversation is not first taken by itself and then referred to him as I heard him yesterday. The memory-object is itself the object, and the only one I have, of the consciousness that I heard him yesterday. So far as I remember that, there is no reference to any former perception of the man, even though he is now also present in perception. The percept of him and the memory of him are two different appearances which in their connection reveal the one thing, the man, whom we now know to be to-day by perceiving, and to have been yesterday by remembrance. Moreover the memory is as much a physical object as the percept. He is physical in so far as, in Mr. Russell's happy phrase, he behaves according to the laws of physics. The remembered man does not speak now, but he is

remembered as speaking, or, to vary the example, the memory-object is the physical man cutting physical trees yesterday.

Thus we have not in memory itself any reference to the perceived. The memory itself is the only knowledge we have that there ever was something perceived. But there is a real truth misrepresented by the erroneous statement. Like a single perception, a single memory is incomplete. The particular percept is full of movement towards other aspects of the thing perceived, and the memory in like manner throws out feelers to other memories. These memories through their internal coherence and continuity build up for us our memory of the whole thing of which they are partial representations, and, as in the case just given, may blend in turn with fresh perceptions, or, again, with expectations of the future. It is then that in our unsophisticated experience (as distinct from the sophisticated deliverances of the reflective psychologist or philosopher) we can think of our friend as the same thing compresent with us in more than one memory. Even then we only introduce into our experience of him the element of his having once been perceived, through familiarity with the blending of perceptions with memory-ideas of the same thing.<sup>1</sup> For this reason it is that, as has often been observed by psychologists, we learn so much more directly about the nature of Time from expectation of the future than from remembrance of the past. Expectation is precisely like remembering except that the object has the mark of future, that is of later than our present, instead of past or earlier. Now we are practical creatures and look forward to the satisfaction of our needs, and the past interests us only theoretically or, if practically, as a practical guidance for the future. But in expectation the anticipated object

<sup>1</sup> For the synthesis of many objects or appearances of a thing into a thing see the discussion later, Bk. III. ch. vii. vol. ii., where it will be seen that the unity of a thing which underlies its various appearances, the objects of perception or memory, is the volume of space-time which it occupies. That volume is filled by each of its appearances, and that is why a single percept or a single memory can be the appearance or 'presentation' of the thing.

is, or very often is, replaced continuously and coherently by the percept, and the expected object may now become a memory. I remember now how the object appeared to me an hour past when I expected it. But whereas the expectation is in the ordinary course succeeded by fulfilment in perception, memory need not be so succeeded and most often is not.

Now it is not the whole thing which we need have before us in memory, but only its appearance altered by the lapse of Time, seen through the haze of Time, as things distant in Space are coloured by their remoteness. The lapse of Time may distort, and when to Time is added the subjective prejudices of the experient the memory of the thing may be highly distorted. But it remains what it declares itself to be when supplemented by similar appearances, nothing but the revelation of the thing through that mist of intervening Time, and the thing itself is only given in the actual memory through the mere reaching out of any experience to other experiences of the like sort.

A memory  
not a  
present  
object.

Thus we avoid the first error of interpreting memory to mean more than it contains. No wonder memory is regarded as so mysterious if it is supposed also to inform us of the perceived past, as if that perceived past could be thought of except through some idea other than the memory. A second error is to suppose that the memory is in some sense present and that it is referred to the past through certain indications of a subjective or personal kind. In one form or another this doctrine is very common. Our ideas come to us in succession it is said, but the succession of ideas is not the idea of their succession. To be distinguished as past or future from the present they must all be present together. "All we immediately know of succession is but an interpretation . . . of what is really simultaneous or coexistent."<sup>1</sup> Even for James the feeling of the past is a present feeling. How far this is true of the *feelings* of past, present, and future we shall inquire presently. Of the objects, it is, I

<sup>1</sup> J. Ward, *Psychological Principles* (Cambridge, 1918), p. 214; *Art. Encycl. Brit.* ed. ix. p. 64b.

venture to think, in flat contradiction to experience which declares the memory to have the mark of the past on its forehead, and the expected that of the future. Not all the subtle and important discovery of temporal signs,<sup>1</sup> whereby places in time are discriminated as local signs discriminate positions in space, avails to explain how objective past or future could be known as past or future were they not already so presented. For whether these temporal signs are drawn from the movement of attention or are bodily experiences with a rhythmical character like the breathing or the heart-beats, they tell us of our person or rather of our body, but they tell us nothing directly of the objects remembered or expected.<sup>2</sup> When we have correlated these personal acts of mind with the time-order of physical events we can use them to compute more accurately the dates of external events. They are indirect measures of succession, but not direct apprehensions of it. On the contrary, they are themselves successive and require some other indication of their own time-order. But if they carry their time-record with them, then past and future need not be simultaneous with the present in our apprehension of events.

The truth is that remembering and expecting do occur at the present moment; but we are not entitled, therefore, to declare their objects simultaneous with the present. To be apprehended as a memory in the act of remembering simultaneously with an act of present perception is not to be apprehended as simultaneous with the 'present' object. The simple deliverance of experience is that it is apprehended as past. The notion that it must be simultaneous with the present in order to be referred to the past is thus the intrusion of a theory into the actual experience.

Remembering has been described as an act whereby a memory is appropriated by the self and recognised as my

The act of  
remember-  
ing.

<sup>1</sup> J. Ward, *Art. Encycl. Brit.* p. 64b, *Psychol. Princ.* pp. 197 ff.

<sup>2</sup> The same thing is true of the local signs. They tell us directly of our own bodies, but not of the external extension or position, except through correlation and indirectly (see later, Bk. III. ch. vi.).

past object. The features of the act of appropriation are more easily seen in the act of expectation. There the mind reaches out towards the imagined future event, and as the expectation becomes more distinct and intensive the image rises out of isolation and is incorporated with the personality. At first there is an image with a future mark but relatively disconnected from the personal life. Gradually it acquires what James calls intimacy, becomes warm with the personal attachment, is attended by emotion. Think of the expectation of some promotion or the fear of some disaster. Expectation is thus a desire or aversion whose aim is not practical but theoretical; it is satisfied by fuller cognition; and in turn all desire is, on its cognitive side, expectation. If we turn to remembering with this clue we discover the same features. There, also, is an isolated image, the memory with the mark of the past. As we remember, it invades us, comes out of its isolation. If the image is of Caesar's death, which we cannot remember, it may be vivid but it fails to invade our personality and link up with our life. It is not a memory but only an imagination and a conceptual extension of past time into a past century with which we had no personal touch. Let it be the thought of a verse once heard but barely rising and in fragments into our mind. We search for the missing or defective words until they at last spring into view and our aim is achieved and we remember that we heard them once. Thus remembering is a kind of desire, but, unlike expectation, directed backwards.<sup>1</sup> It is a retrospective desire; and just as in expectation we find it difficult at times to distinguish the calm contemplation of a future event from the passionate movement to meet it, so in remembering, especially if it does not proceed with ease, we can feel sometimes the passionate effort to drag up the remembered event into clear vision of it. When Odysseus meets his mother in the shades, he asks her the manner of her death, whether it was by disease or the arrows of Artemis. She answers him that it was none of these things, "but longing for you and your counsels, Odysseus, and for

<sup>1</sup> See Art. 'Conational Psychology,' *Brit. J. of Psych.* vol. iv., 1911.

your loving-kindness, which robbed me of my sweet life."<sup>1</sup> Substitute in this passage remembering for longing; the tenderness of the passage would in part disappear, but its psychology remains unaltered. Just as expecting is part of the practical effort towards bringing the desired future object before us, so remembering is the speculative desire of reinstating the past or rather of reinstating ourselves in compresence with it, or, as we say, in presence of it. And it brings the past out of the depths in that form in which an event or thing which was really past can be apprehended at a later date. For Time is real and the past is real as past. It is not real as being present; it is now no longer. But it was real, and reveals itself to speculative or theoretical desire in the form of a memory which is made the personal property of the experient.

So far, we have been concerned with memory proper, where the object is an image or thought with a date, however imperfectly the date is apprehended. It is not necessary for our purpose to describe how we come to be aware of the accurate date, which involves conceptual processes, even in dating a past event five minutes ago. This is a question of the measuring of Time. But partly because of the intrinsic importance of the subject and partly for future use we may make certain observations about the time-characters of ideas in experiences which are not proper memory, but are often loosely called so. In every contemplation we enjoy ourselves, as we have seen, in a time-relation with our object. But the object may have no date. It has its internal time-character, as when I call up in my mind a picture of a man running, or even a thing like a landscape where there is no movement but where the spatial extension involves Time in its intrinsic character. In such a case the image, being a time-saturated object, is contemplated as somewhere in Time, but the position of it as a whole in Time is not dated. This distinguishes a mere revival without memory, or a mere fancy, from a memory proper. It belongs to Time but has no particular date. In the next

<sup>1</sup> *Odyssey*, xi. 202-3.



place, there are reproduced mental objects or characters of things which are not even images at all. Such are the ideal supplements which qualify a sensory object and with it constitute a percept. This supplement has again its internal time-character, but it is not an object distinct from the sensory object. A simple example is the perception of a certain group of colours and shapes as a man. The human characters are only elements in the total which are supplied in ideal form. Consequently they share the date of the present sensum, and in this qualified sense the past is contained in the present.<sup>1</sup> Lastly, I may have ideas which are apprehended as past, which are parts of a successive experience and are retained in the mind but are not memories proper. For instance, the first words of a sentence which are still in my mind at the end or in the middle of the sentence. It would be a mere misdescription to say that the idea was first present and then referred to the past. It is a past object. But it is not a memory; for, though retained from the past, it is not, like a memory, recovered from the past.

The  
'specious  
present' a  
succession.

Thus an image may either be dated and remembered, or, like Caesar's death or other non-personal event, be dated but not remembered, or it may have no specific date, or having a date it may be merely retained. But further, an object may be in the past and yet not an image at all but a sensum. We are thus led to the so-called 'specious present.' Sensory objects, though as a matter of fact they precede the moment of apprehending them by a very small interval, which is not experienced as such but only discovered by reflection and experiment, are in general called present in so far as they are the objects of the present sensing, and this is a mere matter of words, for such objects are the point of reference for earlier or later objects. When I apprehend a sound and a light at the same moment, they are for practical purposes taken as simultaneous though they are not so in fact. But we have mental processes which take place successively where yet the objects are present in sensory form. Such an

<sup>1</sup> See later at end of the chapter.

experience is an example of what is called the 'specious present,' because it is not a 'mathematical' moment but experienced as a duration. The familiar example is that of the path of the meteor where the whole movement is sensory and the path of light is seen at once. We never sense an instant of time, which is, taken by itself, a concept or implies conception. Our sensible<sup>1</sup> experience of Time is primarily that of a duration; and experiment has determined what are the smallest intervals between two stimuli of sound or other kinds which are experienced as durations, and what interval of time filled by intermittent experiences of certain kinds, for example the strokes of a bell, can be held together at once in the mind. The specious present does not mean necessarily a duration which is filled with sensa. It is commonly taken to include also the fringe of past or future objects which have ceased to be sensory, or are not yet so, and approach the state of images, as in the case of a succession of sounds retained together in the mind, for example, in hearing strokes of a metronome, or the words of a connected sentence. Let us confine ourselves to the span of sensory consciousness. In that duration some of the elements though sensory are not only past in the order of the actual occurrence of their stimuli, but are past to an unprejudiced experience of them. Thus though the meteor's path is given to us in a line of light, we are aware of the meteor's movement through that line. Rapid as the movement was we are aware of the meteor's having been at one end before it was at the other. Two reasons may blind us to this truth that the meteor's path is seen as a succession. The first is the fear that the movement would, on this account of the matter, be resolved into a mere series of successive separate positions and its unity be destroyed. The movement is unitary and it is apprehended as such. Undoubtedly, but equally it is apprehended as occurring in a space and occupying a time. How groundless is this fear that a movement so

<sup>1</sup> I use this word for convenience. It does not imply that Time (or Space) is sensed but only that it is apprehended through sense. (For the proper apprehension of Time and Space, see later, Bk. III. ch. vi.)

described is a mere succession of separate point-instants, as if these could be discontinuous, is clear enough from the general notion of Space and Time, and will be more fully seen in the next chapter. The other reason for neglecting the successiveness experienced within the duration of the meteor's path is the fact that, owing to persistence of the sensory stimulation in the retina, the line of movement is before the mind as a stretch of space. This arises from the character of our vision. The separate stimuli leave their after-effects along the retina. This does not carry with it, as is hastily assumed, the consequence that the sensory object is seen all of it in the present. On the contrary, not only is this in experience not so, but the spatial path of the meteor seen 'all at once,' that is, taken altogether in vision, is the best illustration of the essentially temporal character of Space. The visual arrangements actually enable the path to be dated instead of occurring all at one moment. The sensa earlier than the point of light directly present do not in this case fade away into real images. In the case of a specious present occupied by strokes of a metronome I will not undertake to say whether the preceding strokes are retained as after-sensations or are images. I have not the requisite experimental intimacy with the facts. But if they are ideas they are at least past, and if they are not sensations it is because there may be no apparatus in hearing for retaining past sensations in different places, as is the case with the eye.

The present has breadth but not depth.

Thus the 'specious present' is not present at all, but includes within it distinctions of past and present. We may add of future as well. For the broad present may contain at least dawning ideas of what is to come, and even dawning sensory objects, for in vision anyhow we have, corresponding with after-sensations, 'before-sensations' in the process during which a colour sensation is gradually rising to its full intensity or saturation. ('Anklingen der Empfindung,' H. Ebbinghaus calls it<sup>1</sup>). Within this broad duration there is succession experienced

<sup>1</sup> See H. Ebbinghaus, *Grundzüge der Psychologie*, Bd. i. p. 230 (ed. i., Leipzig, 1902).

as such. It has been compared by James to a saddleback as opposed to the present instant which is a knife edge. But there is no reason in the facts to declare that the present is saddlebacked, except so far as sensory objects are simultaneous and not successive as when we see red and blue at once. In other words we should distinguish the 'broad' from the 'deep' present. The present always has breadth as including many simultaneous objects. But it has not depth, that is, breadth in time. Its depth is a succession within duration. No doubt 'the specious present' is a useful conception if it serves as a reminder that we never sense the present instant or the present object by itself, but that we always apprehend a bit of duration, and as a rough, practical description of the present, as rough as the habitual description of present objects as present when they are really slightly past. But otherwise we are compelled to conclude that what it describes is not a fundamental fact of our time experience, and that rather it misinterprets that experience. It describes merely the interesting and important fact that our minds are able to hold together a certain number of objects without having recourse to memory proper, and in particular that a certain number of sensa occupying time in their occurrence can thus be held together in our minds. The length of the time interval so filled varies with the sensory events which occur in it. If the specious present is understood in a different way it is specious in the other sense of deceiving us. Perhaps it may be compared with that other interesting and important fact of the existence of a threshold of sensation below which amounts of stimulation are not felt. This was interpreted by Fechner to mean that the threshold was in some special sense the zero of sensation. Whereas any sensation whatever may be taken as zero if we make it the beginning of our scale.<sup>1</sup>

The 'specious present' is a comparatively considerable time interval of some seconds. The minimal duration which we apprehend as duration is vastly smaller.<sup>2</sup> But

<sup>1</sup> On this topic see the discussion in Ebbinghaus, Bd. i. pp. 507 ff.

<sup>2</sup> For the data see ch. i. of *Psychologie der Zeitauffassung*, by V. Benussi (Heidelberg, 1913).



if we learn by experience that the first contains succession within its duration we may conclude that the elementary duration is successive too, that in fact there is no duration which is not a duration of succession, though the successive moments in a very small duration may not be and are not distinguishable. Or if this is too much to say, then we must urge at least that succession is not something new and additional to duration, but past, present, and future represent distinctions drawn within duration. There is as much difficulty in conceiving elementary durations succeeding one another within a longer duration as in conceiving any duration to be intrinsically a lapse in time and therefore intrinsically successive. We have yet to see how mathematical or conceptual instants can be real. But that our elementary experience of Time should be extensive and yet admit of succession within it is no more difficult to understand than that a blur of red blood should under the microscope reveal itself as a number of red bodies swimming in a yellow plasma, or that sensations we cannot distinguish from one another may under other conditions be known to be distinct. The conclusion is that our sensibility to succession is not so great as our sensibility to duration. Where both can be apprehended the duration and the succession are seen to be of the same stuff. This is true of contemplated or objective Time. In what sense it can be held that Time as we experience it in ourselves is other than a duration which is intrinsically successive passes my understanding.

Enjoyed  
past and  
future  
enjoyed  
as past  
and future.

We have been dealing hitherto with the time of objects and have found that the past is in no sense present but is revealed as past. We have now to turn to the much more difficult matter of enjoyed time. It may be said: past physical events are presented as past, but when the past is declared to be somehow present, the reference is to the apprehension of it, as when, for instance, the feeling of the past is called by James a present feeling or the immediate apprehension of a short succession of events a specious present. I do not feel sure that this is what is meant in all cases. But we may use the easier analysis of

the experience of past and future objects as a clue to understanding our enjoyments of Time. We shall find that past enjoyments are not experienced in the present but as past, and future ones as future. Let us analyse the experience of remembering a past state or act of mind as distinguished from the past object. I never indeed do remember myself without the object, for without an object a mental state is nothing. Even when I project my personality back into the past or forward into the future, I have before my mind either the external objects about which I was engaged or at the lowest the bodily and contemplated constituents of myself. But I may attend to the self rather than to the object, or in other words it may be the self which predominates in my experience. This most often happens when the past event was highly coloured with emotion, and the emotion is renewed in memory. I remember how elated I felt at a piece of good fortune or how depressed with a misfortune. Even without emotion I can faintly remember how highly invigorated I felt by my first bicycle tour when I was young. But though we do not often attend to our past mental states, we never remember a past object without some consciousness however faint of the past state. I remember hearing my friend's conversation, and do it by an act of imagination which is the renewal (to use a neutral term) of that past. Let us suppose ourselves then to be remembering our past state. There are two elements in the mental condition. First, there is the act of remembering, and secondly, there is the imagination (or thought) of my past self. The mere process of remembering offers no difficulty. The imagined state of my mind is lifted from its relative isolation or indifference into intimate connection with myself, and is appropriated by that self. It is from the beginning continuous with the rest of the mind, for otherwise it would not be the image of a past state of *mind*, but it is in the act of remembering attached more closely to the present consciousness of my personality. And as it grows into intimacy the remembered state of mind deepens and expands (always of course with the help of the past object),

and its emotional colour is more vividly revived until it approaches the character of hallucination and we seem half to be actually repeating the old experience.

This act of remembering is enjoyed as present; it is contemporaneous, for instance, with the sight of the friend whose past conversation his renewed visit puts me in mind of, or I remember him at the same moment as I hear a voice like his. We say I remember *now* that I heard him say such and such a thing *then*, or I remember vividly *now* how much moved I *was* at reading his letter. I enjoy here the imagination of the past event. Is this enjoyed imagination of my past state of mind enjoyed as past or as present? Now with regard to the object there was comparatively little difficulty in the answer. The object remembered has the mark of the past. But the object is an existent distinct from the mind and contemplated by it. On the other hand, the remembered state of myself is not an object of contemplation, but is only enjoyed. It is itself a mental act which is in the act of remembering welded into the present personality. Once more we must turn without prepossession to the experience itself, and the answer which it gives is that the imagination of myself which I have in remembering myself is not enjoyed as present but as past. Its enjoyment has pastness written upon its face. What we remember is past as much in our own case as in the case of the external event which is remembered. The remembering is present, but both its object and what we may call its mental material (the past act of mind which experienced it) are past. The appeal is to the bare facts. There may be a good meaning to be assigned to the statement that the renewed mental past is present. But it is not so enjoyed by the experient himself. It can only so be described, if at all, from the point of view of the looker-on, who separates the renewal of the past state from the mind of the experient, and cuts it off from its intimacy both with that experient's self and above all with the object. But as so described it is not the remembered state at all. Looking at it from the outside the psychologist may note that something is happening to the patient

which is present *for the psychologist*, but it is not therefore present for the patient, and if the psychologist so misreads it, he is not putting himself inside the patient's mind and is failing of his duty as a psychologist. Or, again, there is a physiological process in the patient's brain which is simultaneous with the patient's present. But it does not follow so evidently that the mental process which 'accompanies it' is felt or enjoyed as simultaneous. There may be something present in one sense which is not present in the vital sense of being the patient's present and therefore enjoyed by him as present.

In like manner the expected future event, e.g. that I shall be seeing a friend, is enjoyed not as present but as future. It has the mark of the future on it. The act of expecting it on the other hand is present.

This result appears strange only because of the persistent intrusion into the observation of fact of a theory that all mental process is experienced *in* the present or *as* present. Once the facts are accepted as experience supplies them, their interpretation offers no more difficulty than the interpretation of a past *object* in memory. My enjoyment is a past enjoyment, and it is thus that a being which does not make its own states objects to itself is aware of its past. Precisely so, the past object of memory is the appearance to me of the past thing in the present act of remembering. The past enjoyment, which I have called the material of the act of remembering my past state, is the way in which the actual past of the mind is revealed in the present. But it is not revealed *as* present. Nor is it revealed *in* the mind's present, though it forms one part of the total of which another part is the mind's present. Because it forms one part of that total it is imagined to persist into the present. And so it does, but it persists as past. If Time is real, if the past is not a mere invention of the mind, and this is our original hypothesis, the mind at any present moment contains its past as past. Otherwise, to fall back on an argument used *ad nauseam* in respect of physical Time, there would be no mind at all but a continual re-creation

Difference  
of 'as  
present'  
and 'at the  
present.'

of quite independent and molecular mental states, which is contrary to elementary experience.

Thus a remembered mental state is a past enjoyment, as it is enjoyed after the lapse of time, the machinery for such awareness of the past being the process by which for one reason or another the brain is thrown into a corresponding, or a partially identical state with the actual past state of the brain during the past experience. The past is revived in imagination of my mental state just as it is revived in imagination of a past object. I know my own past only through the enjoyment of it as past.<sup>1</sup>

Illustration  
from  
memory of  
emotion.

The truth that the renewal in memory of a past state of myself is not merely a fresh excitement of myself in the present may perhaps best be seen in the memory of emotions. It is sometimes thought that there is no such memory, but only memory for the exciting object of the emotion and a new present emotion aroused by this memory. An interesting census was taken by Th. Ribot, the results of which will be found in his *Psychology of the Emotions*, ch. xi. He concludes to the existence in some cases of an emotional type which does remember emotions. But the question is rather how emotions are remembered? Are they really memories or are they real or actual new emotions which are excited by an image? that is to say, not different from a present emotion. All revived feeling is new feeling, it is said, attached to an ideal object. This seems to be the meaning of the poet Sully Prudhomme, quoted by Ribot, who says, speaking of some past incidents of an emotional character, that he is now a stranger to the feelings he remembers in connection with them; "but as soon as by an effort of recollection I make these memories more precise they cease *ipso facto* to be memories only, and I am quite surprised to feel the

<sup>1</sup> On the whole question of experience of the past, see a very useful discussion by A. Gallinger, *Zur Grundlegung einer Lehre von der Erinnerung*, Halle, 1914. "To be aware of something at the present is not the same thing as to be aware of it also as present" (p. 92). "In remembering we have a knowledge of past experiences (*Erlebnisse*), but not a knowledge of the present consciousness of past experiences, nor even of present memory pictures of past experiences" (same page). But I do not claim the writer's support for my general doctrine.

movements of youthful passion and angry jealousy revived in me. And again I am almost inclined to ask myself if every recollection of feeling does not take on the character of an hallucination" (p. 155).

So far as I can trust my own experience I believe we can observe a distinction between a remembered and a present emotion. I remember the feeling of shame felt at a social blunder; and the more vividly I represent the circumstances the more intense the emotional excitement becomes, and the more completely it includes the bodily expression proper to the emotion and invades me. Still all this personal experience is detained in attachment to the past object, and despite the urgency of the feelings I am lost in the past, and the whole experience, object-side and subject-side alike, has the mark of the past. But suddenly I may find myself arrested; I forget the past object and I become aware of the emotion as a present state, in which the object is for the most part the bodily reactions, the flushed face and qualms about the heart. I change from a past enjoyment to a present one. What the difference is I find it hard to say; the pastness of the image seems to draw the feeling after it into the past as well. It may be that the whole difference lies in the compresence with the past object. But the difference is for me palpably there. Thus a new or actual emotion, with its sensorial character, ceases to be a present emotion when it is compresent with a past object; whether it is neurally or mentally slightly different from the emotion roused by a present object or not, it becomes a past enjoyment in this connection. Its *actuality* no more makes it a present emotion than the sensory character of the beginning of the meteor's path in the sky makes it present, when the real present is the end of the path.

Before pursuing further the ideas suggested by these facts let us note briefly that where there is not memory proper but only retention in the mind, the earlier stages of the mental enjoyment are past and not present, and that the specious present, the present with a depth, is not really a present in enjoyment, and that consequently, to sum the whole matter up, we cannot hold that the



experience of the past is a present feeling, whether we speak of the past object or the past state of mind.

What is  
present in  
an enjoy-  
ment of  
the past.

We may now ask ourselves what is really present in the strict sense when there is a past enjoyment; what it is which lends colour to the belief that the remembered state of mind is actually present. The answer is that the underlying neural process is present, and that process is partially at least the same whether the act of mind be a perception of a present or a memory of a past object. I do not raise the vexed question whether images occupy the same places in the brain as their corresponding percepts, or different places. If the same, then the same tract of brain may be occupied at one time in the observer's present and at another in his past. If not, yet since a percept already contains elements of an ideal character complicated with the sensory elements, the seat of percept and image is at least partially the same. Moreover, it is quite possible that though image centres may not be the same as sensation centres, yet since they cannot be supposed disconnected, the excitement of ideas may overflow into sensory centres. Thus a revival in imagination partially at any rate occupies the same place as if it were a sensory experience. A present and a past enjoyment may be in the same contemplated or enjoyed space but belong to different enjoyed times, or, to put it otherwise, a tract of brain may be occupied either by a present or a past enjoyment.

The case of remembered emotion illustrates this matter well. Why is it, the question is asked, that we do not confuse an image of a past event with a present event, and yet a remembered emotion is or tends to be hallucinatory? The answer might be suggested that an image becomes hallucinatory only when sensation is involved. Now, normally, sensations require the presence of the actual stimulus from without. Thus, for instance, the imagination of a coloured disk is not usually sensory, for although it may lead to various movements of the eyes or other organs, those movements do not excite colour sensations. But the case is different with the

emotional excitement produced by such an object. That excitement issues or tends to issue in the appropriate bodily movements of the emotion, and these movements are felt in the form of actual sensations, organic or kinaesthetic. The bodily resonance which forms so large a part of an emotion is brought into existence by the imagined emotion itself. On the other hand, the movements induced by an idea of a picture do not reinstate in a sensory form the details of the picture, because that is outside the bodily organism; they only give us bodily sensations, not sensations of colour or smell. To have an hallucination of colour, the internal conditions must be the exceptional ones under which an image overflows into the sensory centres.<sup>1</sup>

It is a familiar fact that to an observer in motion two events may occur at different times at the same place

<sup>1</sup> Though my interest here is not primarily psychological I may stop to raise in a note the question, which is naturally suggested by the above, of the revival of organic and kinaesthetic sensations. I find it very hard myself to get images of them, but others do, and there is no reason why these sensa which are external though personal should have no images. There are real reasons, however, which distinguish these sensations from specific sensations. For their sensibles or sensa are bodily conditions, and the neural process which underlies the sensation, the sensing of them, is also bodily. Whereas, as explained in the text, in the case of colour the sensing has a bodily neurosis which underlies it, but the sensum is outside the body. But a kinaesthetic image leads to a movement which continues the excitement. The movements of reaction produced by the image sustain the image, and do so in a sensory form. The reaction is, in Mr. Baldwin's phrase, a circular one. Hence, like emotions, these representations tend to be hallucinatory, as in my case they generally are. Thinking of moving means really beginning to move. Now it may very well be with these and the organic sensations that though their representations tend to be hallucinations, their associates may give them a pull into the past or future, and in that case they would still deserve to be called images. The same thing applies to organic sensations. Some psychologists declare (and I followed them myself in a paper in *Arist. Proceedings*, 1909-10) that they do not admit of representation at all. At any rate their behaviour in this respect puts them for purposes of knowledge in a class by themselves. Seeing that our minds are correlated with our bodies, and these are the sensations from our bodies, it is not surprising that they should occupy a peculiar position in the rank of sensations. (The sensa are in fact living conditions which we apprehend directly in our bodies. See later, Bk. III. ch. vi.)



which to an observer at rest occur at different places. Mr. Langevin's instance is that of dropping stones through the floor of a railway carriage in motion. To the traveller in the carriage two such events will occur at different times but at the same place. To the outside observer at rest the stones will fall at different places. In both cases the space is contemplated. Take now enjoyed and contemplated space. The space I enjoy is that of a part of my body. But my body, say my head, may change its place in the wider contemplated Space to which it belongs, but its parts retain their internal relations as enjoyed, and, as we have seen, mental directions remain unaltered. Thus what is the same place for enjoyment may be in two different places for contemplation.

A similar account applies to the connection of enjoyed and contemplated time. My remembered time is past in enjoyed time. But it occurs in a space which is the same or partially the same for the outside observer, whether the mental process is a present or a past enjoyment. Let us recur to the old case of a conversation remembered at the moment I hear a voice or see a photograph. The physiological process underlying the remembered past is occurring to the observer at the same time as my sight of the photograph. And the enjoyment of the past occupies, at least in part, the same place as if the event were present. To the experient the event is past. To the outsider it might, for all he knows, be either past or present, at least so far as the identical parts of space are concerned. The contemplated present neural event may be either a present or a past enjoyment. Suppose, now, an angel contemplating me. For him my mental process is exposed to his contemplation as well as the neural process, while to me or you it is not. The angel would see the neural process physically synchronous with my present. But the mental event would be seen by him to have the mark of the past, because he could see into my mind as I enjoy it. He would distinguish the past enjoyment from the present enjoyment at the same place, and would see that two events by way of enjoyment might share the same neural process. He would, I suppose, make the distinction of

past or present directly in the mental events, and would also, I suppose, see differences in the neural process before him which we might with sufficient knowledge see. When I take the point of view of the angel I can understand how my enjoyed time may return to its old place and partially at least occupy a present contemplated process, whether it is a past or a present enjoyment. If I am right in my account above of the change from an emotion referred to the past to the emotion referred to the present, this is what I actually do experience in such a case.

Thus when a remembered state of mind is declared to be a present feeling, we are, as I said, making a psychological mistake which can be accounted for either because, being an enjoyment, it enters into the total mass of our enjoyment at our present moment; or because the neural process corresponding to it does occur at the present in the neural space as contemplated from outside.

Whether in the study of past and future objects or in that of past and future states of ourselves, we have thus seen that our consciousness of past and future is direct, and is not the alleged artificial process of first having an experience of the present and then referring it by some method to the past or future. There is no such method given in our experience, and we have therefore no right to assume it just because we start with the fancy that all our experiences must be present. If difficulty is still felt in the unfamiliar notion that we enjoy our past as past and our future as future, the answer must be that in the first place facts, however strange the description of them may be, must be accepted loyally and our theories accommodated to them; secondly, that as to the special explanations suggested above, of how a present neural process may be felt as a past enjoyment, an explanation like this is theoretical and designed to remove a theoretical difficulty. For immediate acquaintance with our past and future tells us nothing about neural processes, and if we confine ourselves to our enjoyment of ourselves, we find that the memory or the expectation of a past or future state is the way in which we enjoy past or future, and that there is no

Mental  
space-  
time.

more to be said ; just as our memory of the past object is that past object as contemplated now in the act of remembering, and there is no more to be said.

But now that by an appeal to experience we have rid ourselves of the confusions as to our past and future enjoyments which were engendered by a mistaken reading of experience, we can proceed to examine the space and time of the mind in their mutual relations, and we shall see that they do not exist separately but are only elements in the one mental space-time which exhibits to inspection of ourselves the same features, with such qualifications as may be necessary to note, as the Space-Time of the external world, with a part of which it is identical.

Mental  
space and  
time in-  
volve each  
other.

We have in the first place at any moment a mass of enjoyments (that is, experiences of ourselves, or experientings), part of which is present, part memories or remembered enjoyments, part expected enjoyments with the mark of the future. These enjoyments occupy diverse places in the mental space. Present enjoyments are in different places from past and future ones. The enjoyed space is not full of mental states all occurring at one and the same time, but it is occupied, so far as it is occupied, with mental events of different dates. But, as we have seen, what is now a present enjoyment may at another moment be replaced by a remembered one ; and what is now a memory may on another occasion be replaced by a present occupying partially at least the same place ; the dates or times being on different occasions differently distributed among the places. Thus enjoyed space is full of time. In the same way enjoyed time is distributed over enjoyed space, and spreads over it so as not to be always in the same space. Thus empirically every point in the space has its date and every date has its point, and there is no mental space without its time nor time without its space. There is one mental space-time. Our mind is spatio-temporal. The easiest way to make ourselves a picture of the situation is to suppose the identification of mental space with the corresponding contemplated neural space completed in details, and to substitute for the enjoyed space, for pictorial purposes, the neural space with which

it is identical, that is, to think of specific mental events as occurring in their neural tracts. When we do so, we see mental past, present, and future juxtaposed in this space ; or the places of mind succeeding each other in their appropriate times.

Such a picture of mental space-time at any moment is the perspective we enjoy of it at any moment or from the point of view of that moment. But the picture is not complete. The present enjoyment and the remembered one are enjoyed as juxtaposed. But they are not in bare unrelated juxtaposition. For a remembered past state is in remembering linked up with the present. There is a felt continuity between them. The same thing is more obviously true where there is not memory proper but a past condition is experienced as retained in the mind only, being at the fringe of a total experience, as when we retain in our minds at this moment the lingering remnants of our past condition, in going through some complex experience, as, for example, in watching the phases of an incident which stirs our feelings. That there is this transitional relation of movement from the one element to the other, is shown by the familiar fact that when one member of a series of mental states is repeated in experience the others also are revived in their time-order.

Perspec-  
tives of  
mental  
space-time.

We have thus to make a distinction, which will prove important also in the sequel in another connection,<sup>1</sup> between two kinds of process enjoyed in mental space-time, which corresponds to the distinction between 'substantive' and 'transitive' states. First, we have the process intrinsically belonging to any mental act independently of others, for instance, the process of sensing a colour. No matter what the underlying and corresponding neural movements may be, we have, as was mentioned before, the mental process of the dawning of the sensing to its maximum and the subsequent evanescence. Thus to be aware of any particular sensum is to enjoy a mental movement

<sup>1</sup> See the distinction drawn later between the intrinsic and the extrinsic extension of a sensory quality. Bk. III. ch. vi.

appropriate to it. But besides this intrinsic movement, there is also the movement from one sensing to another of a different (or to a repetition of the same) sort, as when a colour sensation is succeeded by one of sound. A mental process of one direction (that is compresent with an object of one quality) is linked by a movement of transition, apprehended as such, to a movement with another direction, that is compresent with an object of another quality; or in other words, there is a change in the quality of the experience. Thus while there are two independent lines of advance in the mental space-time corresponding to the two different qualities, there is also a line of advance which connects these two lines, the neural path being, from the purpose which it subsequently serves, known as an association-path (or fibre).

Even when two mental events occur simultaneously, as when I hear a voice and touch a hand at the same moment, this is not bare juxtaposition in space, if that word implies accidental or disconnected occurrence. On a subsequent occasion the image of the voice may recall the touch or *vice versa*. We have here a case of two different perspectives where events contemporaneous in the one perspective become successive in the other. Though the original relation appeared to be purely spatial, the mental events occurring side by side, a later perspective shows it to be also temporal. The two events belong to the same date, or the time was repeated at the two different points at which they occurred. They are connected in the mental space-time. This is our enjoyment of the relation of 'and,' corresponding to the contemplated relation of 'and' between the objects. A subsequent experience reveals that the two events are somehow connected in mental space-time by lines of advance. We may bring our awareness of 'and' into coherence with the relation of transition by passing from one object to the other in either order.

Among mental events which are simultaneous are those which belong together as part and parcel of one complex occurrence. Every mental event is spread out in fact. (It has even been suggested that a more

intense act of sensing means a greater spatial extension of it.) The best instance is derived from ordinary perceiving. There is the sensory excitement and the ideal qualification of it. These belong together in mental space, but they do not in general occupy the same parts of space; for example, the sight of the marble qualified by the ideal feeling of cold. We have here a mental act with a structure; that is, parts of it are inherently in mental space at the same moment, or the mental instant is repeated in space.

In the same way, as we have seen abundantly in dealing with memory of mental states, we have mental space repeated in time; that is, several events of the same sort occurring at different times but belonging to the same space; that is, we have time coming back to its old place. And we may repeat a remark like one made before in Chapter I. of physical Space-Time, that the repetition of time in space, which is the fact of the broad (not the deep) present, and of space in time, which is the fact of memory, are of the essence of mind as something with a structure and persistence.

We have thus found from simple inspection of our minds, and bringing to bear on the question the most commonplace kind of psychological observation, that space and time in mind are in experienced fact related in the same way as we have seen them to be related in physical Space and Time. Space and time in the mind are indissolubly one. For myself it is easier to be satisfied of this relation between the two, and all the details which enter into it—repetition, variation in the perspective whereby the contemporary becomes successive, and the like—in the case of mind, than in the case of external Space and Time, and to use this result as a clue to interpreting external or physical Space-time. But I have explained already<sup>1</sup> why I have not adopted what for me is the more natural order.

We may now approach the more difficult question, in what sense it is possible, as it was in the case of

<sup>1</sup> Ch. iii. p. 93.

The  
mental  
correspond-  
ent of  
Total  
Space and  
Time.

physical Space-Time, to make a selection from all the perspectives which the mind enjoys of its own space-time and treat the whole of mental space as occurring at the present and the whole of mental time as occupying one point of mental space. In the case of physical Space-Time we saw that an all-comprehensive observer whom we ourselves follow in thought could make such a selection, and we arrived thus at the ordinary notions of a Space in which at a given moment some event or other was occupying every point—Space as the framework of Time; and of Time as the framework in which Space occurred, that is of a Time the whole of which streamed through every point of Space. In mental space-time such results are obtainable, but only approximately and with a qualification.

At first sight it might appear that there was no difficulty in taking a present 'section' through the whole of our mental space. We have only to identify the neural space, say the brain, with the mental space, and then it would seem that at any instant of our life every point in that space was occupied by some event or other that occurred in our history. But mental space enjoyed in any mental state is not merely neural space, but that neural space which is correlated with the mental action. There may be events going on say in the occipital region which happen there but which are not of that particular sort which is correlated with vision, or, as I shall often express it, which *carry* vision. Though the whole contemplated space within which mental action takes place may be considered by proper selection from all the moments of its history as occupied by some present event or other contemporary with the present, they will not necessarily be mental events. They may be unconscious.

Sections of  
mental  
space-time.

When we consider mental events as such and neural processes only so far as they carry mind, we cannot find a section of mental space-time which is either the whole mental space occupied by contemporary events or the whole mental time streaming through one point. In our own experience it is clear we get no such thing.

Our enjoyed space in a moment of experience may on occasion be so limited that it contains neither memory nor expectation but is wholly present. For example, we may be absorbed in perception. We are then entirely present, for the ideal features in perception are, as we have seen, not expectations or memories, but are merely qualifications of the present, which are there indeed as the result of past experience, but have not the mark of the past nor even of the future. But though in such a perspective our mental space is all present, it is not the whole of our mental space, but only a part of it. Or again I may be seeing a man and also remembering something about him. The one place in the mental space which is common to the perception and the memory may belong both to the perception and to the memory. But it does not belong to them both at the same time, and is alternately part of the present perceiving and the past remembering.

This is as far as I can get by actual acquaintance. Even the angelic outsider, though he will go farther, and though we may anticipate him by thought, will not get a complete section. He cannot see the whole of our mental space occupied by the present moment. He can realise that any neural process which at this moment of my mind is for me a memory might have been occupied by a mental event contemporary with my present. But it is not certain that he can find such events. Potentially the places now occupied in my perspective by memories or expectations may be occupied in other perspectives by perceptions of the present date. But the selection is only a possibility and nothing more. In the same way he may think that the place of my present mental act may potentially be the scene of some mental event at every moment of my history. But again this is only a remote possibility.

The reason for this difference between mental space-time and physical Space-Time is that the second is infinite and the first finite. We are finite beings, and part of that finitude is that our neural space performs only specific functions. Hearing does not occur in the occipital, nor



vision in the temporal region. But in physical Space-Time the reason why in the summation of perspectives a selection could be made of events filling the whole of Space at one moment, or the whole of Time at one place, is that the quality of the events was indifferent in the infinite whole. In one perspective a point of space is past, but in some other perspective a quite different sort of event might occupy that point in the present, that is at a moment identical with the point of reference. I see in front of me a point in a tree where a bird alighted a quarter of a second past. But a quarter of a second later, that is at the same moment as my act of seeing the bird, a bud sprouts on the tree at that point. That event is future for me, but for you, the onlooker, it occurs at the same moment as my act of sight, that is, you see them both as contemporary. There is thus always in some perspective or other some event or other at any point of space contemporary with my present. But places in mental space-time are, because of the specific character of the events which happen there, only occupied when there are events of the same sort. Now I am not every moment using my eyes, still less seeing a particular colour, such as red, at every moment of my history. We cannot, therefore, have a section of our whole history in which our whole space is occupied at each moment with some event or other; nor one in which each point is occupied by some event or other through the whole of our time.

Except for this failure to find corresponding artificial sections in mind, the microcosm, to infinite Space-Time, the macrocosm, a failure founded on the finitude of mental space-time, the relations of Space and Time to one another are identical in the two. It is obvious that the exception would apply equally to any limited piece of Space-Time which is occupied by the life of a finite thing, whether that thing is mental or not, provided it has specific qualities.

Mr. Bergson on Time and Space.

In Mr. Bergson's conception of Time or *durée* which is mental or psychological and is real Time which is the moving spirit of the universe, the past is said to penetrate

the present. Upon our analysis of memory there is a very good meaning to be attached to the penetration of the present by the past. It has been illustrated more than once by the qualification of the sensory present of perception by ideal elements which are an inheritance from the past. The past here leaves its traces in the conscious present. Other illustrations are the persistence of past experience in the form of dispositions which affect the present experience; which may favour the emergence of one thought in our minds rather than another, or which may break in on the course of our thoughts and determine them, as for example a latent prejudice against a person. Whether these dispositions are properly psychical in all cases, or may not sometimes be physical traces which can condition and affect what is strictly psychical, we may leave undetermined. But in all these cases the inheritance from the past has the date of that which it conditions and into which it is merged.

Such present deposit in the mind of traces of the past are not, however, peculiar to mind, but are found in physical, to say nothing of organic, bodies. A storm blows and a tree or chimney leans out of the straight. The ground subsides and a tower leans. The storm and the subsidence belong to the past of these bodies, but the past persists in its effects, in the altered inclination, and this inclination is a factor in the response which is made to a fresh shock. Now to the outside observer these present conditions are traces of the past. So, too, the outside observer, knowing that I have seen a man already, may see in my recognition of him as a man that I am experiencing the traces of the past. But I should not myself experience them as past, for there is no true memory in my mind. Per contra, if we endow the tower with a mind and true memory it would perhaps remember the subsidence of the ground which made it sink, but it would remember this event as belonging to its past, and would not be conscious of it merely in the present effects left behind by the past.

But if there is real consciousness of the past, whether in the mere form of a past retained as such or in the form

of true memory, the enjoyment of the past has not the mark of the present but of the past. It is only from the outsider's point of view that, as we have seen, it is possible to describe a conscious past as present. Strangely enough Mr. Bergson, whose method is distinguished by its effort to take the inside view of things, fails, as it appears, to distinguish the act of remembering, of appropriation of the past, which is really present, from the remembered past itself.

Now if the remembered past is past, and only in that way have we memory of our past which was once present to us, then penetration by the past can, as it appears to me, have no significance which Space does not also share with Time. It means two things: first, that Time is continuous; and secondly, that each event in time is affected by what went before. These are indeed the same thing by two different points of view. Now, in the first place, the parts of real Space penetrate as much as the parts of Time, and for the excellent reason that every part of Space is animated by Time which drives it on to merge continuously in the rest of Space. Further, if Space were not a penetrating continuum, Time, as we have seen, would be none either. It would be once more a moment which would not know itself to have a past.

Secondly, it is part of the continuity of Time that material events (and pure events as well) have a different meaning because of their preceding events. This is both true and important. But, again, it does not distinguish Time from Space. It confuses the value which elements have in their combination from their intrinsic nature. A man is the same man by himself or in a crowd, but he may be fired by a crowd into doing acts which he would not do alone. A sensation of white is not the same in all respects when it is experienced the second time as the first time; it has become familiar. But the white is the same as before; only it is modified by assimilation; it is qualified by the trace of the past. We no longer have, as before, the bare sensation, but something more complex. So, again, if white and sweet are connected in a continuous whole, the white remains white and the sweet sweet. But

the elements have a new value in this combination. The sweet is that of sugar. But equally it is true that a point has a different value as a point on a circle and as a point on a straight line, while it remains the same point. It lies on different lines of advance.

The main result of our discussion has been to show that Time is really laid out in Space, and is intrinsically spatial. The representation of Time as spatial, Mr. Bergson regards as depriving Time of its real character. What he regards as a habit founded upon the weakness of our imagination has now been shown to be vital to the nature of Time. But his antagonism is determined by his belief that the Space in which Time is so spread out is the abstract Space which he believes is the Space of mathematics; and the Time which is thus spatialised is therefore not real Time but only abstract Time. It is impossible to do justice to him without discussing what mathematical Space and Time are; and to this task I shall now proceed.

## CHAPTER V

### MATHEMATICAL SPACE AND TIME

Are points  
fictions?

PHYSICAL Space and Time are thus one with mental space and time, or, more strictly, portions of the one Space and Time may be enjoyed and are identical with parts of the one contemplated Space and Time. Space and Time as we have regarded them are empirical or experienced extension or duration, though as continua of moments or points they have been described by help of conceptual terms. Are Space and Time so regarded the Space and Time of the mathematicians, and if so, what is the difference between the metaphysics and the mathematics of them? Our answer will be, that directly or indirectly mathematics is concerned with empirical Space and Time, and that, however remote from them mathematics may seem and be, they are never in mathematics torn away from their original. But a difficulty meets us at the outset because of the different conceptions of mathematics entertained by mathematicians themselves. According to some, Space and Time are the absolute or total Space and Time consisting of entities called points or instants. According to others, and they are the more philosophical mathematicians, Space and Time are not extension or duration, not in any sense stuff or substance,<sup>1</sup> as Descartes, to all intents and purposes, conceived particular spaces to be, but relations between material things which move in them. This is the relational conception; as distinguished from the absolute conception, which is expressed by Newton in the sentence,

<sup>1</sup> See, for the qualification of the use of the word substance, Bk. II. ch. x. p. 341: Space-Time is not substance at all, but stuff.

"For times and spaces are as it were the places as well of themselves as of all other things" (*Princ.* Book I. Schol. iv.). The contrast of absolute and relational is as we have seen entirely different from that of absolute and relative. But the relational conception of Space and Time carries with it, especially in its more recent forms, consequences which make it seem almost impossible to affirm that there is only one Space and Time, namely, the empirical one, with which mathematics is concerned. Rather it would seem that empirical Space and Time are but particular examples of constructions of a much wider scope.

The Space and Time of the previous chapters are then empirical. In essentials they are absolute Space and Time, though, regarded merely as constituents of the one reality which is Space-Time, they are purged of the errors which attach to them when they are considered independently of one another. All Space in fact is full of Time and there is no such thing as empty Space; all Time occupies Space and there is no such thing as empty Time. I do not think that the ordinary geometry (Euclidean or other) assumes Space to be divorced from Time. It makes no assumption on this point at all. On the contrary, whenever its purpose is suited it conceives of a figure genetically as traced by movement in time. Nor does mathematics in dealing with Time assume it to exist by itself. It treats Time by itself, though for the most part Time enters as being an element of motion, and consequently so far in space. But to treat Space or Time by themselves is not to assume that they can exist apart from one another. There is nothing in the procedure of geometry (I say nothing of the views of geometers themselves in the history of the subject) which implies that Space is a system of resting points, or Time a uniform flow which has no habitat.

The entities called points, of which Space is composed (or the instants of Time), are, it is said, commonly regarded by mathematicians as fictions. Mathematicians are very prone, indeed, to regard the notions and the methods they employ as fictions, as if they were mere constructions of our minds. The famous writer, R. Dedekind, himself

one of the authors of that movement which has made geometry by an immense generalisation a department of arithmetic, pronounces numbers to be "free creations of the human mind."<sup>1</sup> Under these circumstances we may ask ourselves the preliminary question, When is a fiction fictitious? I adopt, for instance, a son who becomes my son by a legal fiction, by a generalisation or extension of the notion of son. How much of this fiction is real and how much unreal? So far as I treat him as a son, exchange with him affection and care and perform certain legal and moral obligations to him, the adopted son is really in the place to me of a son. There is no fiction here. There is only fiction if I strain the relation: if I should, for instance, go on to pretend that he owes his height to me and his wit to my wife, that his colour-blindness is traceable to her and may be found in her brother, and a little pit in the skin beside his ear to my father. Here the fiction becomes fictitious. The legal and moral relation of sonship must not be interchanged with the natural one of inheritance. But in other respects the fiction is a true description of the new facts initiated by the adoption.

Isolation of points corrected by conception of continuity.

Now the assumption of points as elements of Space in a continuous series is an attempt to describe in ideal and partly conceptual terms the given or empirical fact of the continuity of Space, that any stretch of space however small is divisible, and that there is no smallest part. So far as the point is thought to be a self-subsistent entity by aggregation of which with other points Space is constituted, the point is fictitious. But such an assumption is not in fact, and never need be, made. On the contrary, the idea of the separate point is a first approximation, which is corrected by the notion of its continuity with other points. This happens even in the ordinary elementary geometry. For more thorough-going or philosophical mathematical analysis the concept of continuity taken over from sensible continuity is deepened into the analysis of continuity, which then supersedes that merely

<sup>1</sup> *Was sind und was sollen die Zahlen.* Preface, p. vii. (Brunswick, 1911, ed. 3).

sensible continuity. This analysis is a crowning achievement of mathematical speculation. It has been described recently by Mr. Russell.<sup>1</sup> Like infinity, which has been touched upon before, it is not a mere negative but a positive conception. It does not rely upon or refer to any mental incapacity in us, that we are unable to reach an end of the division, but upon a real characteristic of the continuous series. We can think of Space extended indefinitely, said Locke, but not of Space infinite, because, in the happy phrase which contains the substance of Kant's later and more famous discussion of the same problem, we cannot "adjust a standing measure to a growing bulk."<sup>2</sup> In reality, infinite Space precedes any finite space. In the same way Space is not merely infinitely divisible in the sense that its division admits no end, but is in itself infinitely divided in the sense that between any two elements there exists another element; so that no two elements—we may call them points—are next or adjacent. Thus, just as before with the infinite the finite meant defect and the infinite self-subsistence, so here the division into a finite number of parts implies selection from the infinite of parts in the real continuum.

In this way the point which is an unextended entity with a fictitious self-subsistence is brought into conformity with facts by the correction of the conception. The definition of continuity starting with separate points screws them, or squeezes them, up into that closeness which is needed to express the nature of Space. Even this degree of closeness is not enough for the perfect definition of the continuum. But the further criterion which ensures that the series of points shall be not merely 'compact,' according to the description given that no two points are next points, but 'dense,' is more technical than I can take upon me to reproduce here. The effect of it, however, may be illustrated from the old puzzle of Achilles and the tortoise. In that puzzle the steps taken by the two competitors form two series which do not reach in any number of

<sup>1</sup> B. Russell, *Our Knowledge of the External World* (Chicago and London, 1914), ch. v.

<sup>2</sup> *Essay*, Bk. II. ch. xvii. § 7.



steps the point at which as a matter of fact Achilles overtakes the tortoise. That point is the limit of the two series. But though the limit is not reached, and is not the end or any member of the two series, it is a point on the actual line of the journey which both Achilles and the tortoise make. The fact that Achilles does overtake the tortoise is the very mark that their course, which has been artificially broken up into discrete lengths, is really continuous.

The mathematical notion of continuity contains no dreaded infinite regress; the infinitude is of the essence of the datum and expresses no repetition of steps upon our part. On the other hand, if it be asked what is there in space-points which makes them continuous, we are asking a different question from the question what is the criterion of their continuity. The answer, if I am right, must be that points are continuous because they are not mere points but are instants as well. It is Time which distinguishes one point from another, but it is Time also which connects them. For the point is really never at rest but only a transition in a motion. Now it is this restlessness of the point which is expressed in terms of Space itself by the criteria of continuity which the mathematician adopts in order to free his points from their apparent isolation and self-dependence. We are brought back to the conclusion that the mathematical notion of continuity as applied to Space or Time is an attempt to render in terms of points or instants their crude original continuity, and carries with it the corrective to the apparent isolation of points and instants. At the same time, it must be insisted that the mere concept of continuity of either points or instants is only adequate to the crude continuity of actual Space or Time when the points are recognised as being intrinsically instants and the instants points; just as the concept of dog can only be adequate to a particular dog when it is embodied in individualising circumstance.

The spatial-  
ising of  
Time.

We may pause, before passing on, to complete the remarks which were made in the last chapter on Mr. Bergson's repugnance to the spatialising of Time. Mental time or *durée* was, we saw, laid out in space, where Space

was understood to be the Space common to both the physical world and the mind. Thus the spatialising of mind or Time, which Mr. Bergson regarded as a common and natural vice, is in fact of the essence of Time and mental life. But the Space which Mr. Bergson fears and regards as the bare form of externality, the dead body into which the world resolves when Time is arrested, is what he supposes the Space of the geometer to be. Now if mathematics understood by Space or Time the Space of absolute rest, or its counterpart and mirror in mere undifferentiated, and inert, inefficacious, Time (and this is what Mr. Bergson is contending against), his fears would be justified. Such Space and Time are abstractions and correspond to nothing real. But, as we have seen, the Space and Time of the mathematician are not such, or at least are not necessarily such, and we are assured that they are not in fact so treated. Space is legitimately considered by itself and Time likewise. But they are not considered as made up of separate parts but as continuous, and their continuity is defined. In like manner motion is not for the mathematician made up of separate positions, but of separate positions corrected by continuity. Mr. Bergson's main concern is with motion, and he rightly insists that motion is a whole and continuous, having in his mind the original continuity which is given empirically and is antecedent to the conceptualisation of it in mathematics. This conceptualisation he mistakes apparently for destruction, and supposes that Space has been reduced to a series of separate points, and Time with it to a series of separate moments. It is true, moreover, that since geometry omits Time from Space there is a certain artificiality in the reconstruction of continuity within Space in purely spatial terms, and there is a corresponding artificiality in the continuity of Time without reference to Space. This arises from the nature of the case, and indicates that mathematics is not, like metaphysics, an ultimate treatment of its subject matter—on which topic more anon. What Mr. Bergson appears to forget is that this science works within its limits, but in doing so does do justice to that very continuity and wholeness of Space

and Time, and with them motion, for which he himself is pleading.

The consequence of this misapprehension is visible through the twilight which envelops Mr. Bergson's conception of the relation of Time to Space and, with Space, to matter. No one has rendered such service to metaphysics as he has done in maintaining the claims of Time to be considered an ultimate reality. Moreover, Space is for him generated along with Time. The movement of Time, the swing and impulse of the world, the *élan vital*, is also a creation of matter. The two mutually involved processes remind us of the roads upward and downward of his prototype Heraclitus. But with his forerunner this relation is conceived quite naïvely: we are told that the unity of opposites means nothing more with Heraclitus than that opposites were two sides of one and the same process, so that day and night were but oscillations of the "measures" of fire and water.<sup>1</sup> With Mr. Bergson, on the other hand, Space is a sort of shadow or foil to Time, and not co-equal. It implies degradation and unreality, relatively to Time. Time remains the unique and ultimate reality. We have seen reason to regard them as so implicated in each other that each is vital to the other's existence. But whether this feature of his doctrine, at once the most interesting for the metaphysician and the most obscure and tantalising, is the outcome of his apparent misapprehension of the purpose and legitimacy of geometry, or the latter misapprehension a consequence of his incomplete analysis of the true relation of Space and Time, I leave undetermined, my aim being not to offer criticism of current or past philosophies, but to indicate where the analysis here maintained differs, whether to my misfortune or not, from a deservedly influential system of thought.

Mathe-  
matical and  
empirical  
Space.

The points of space and instants of time when interpreted aright are no fictions, in the sense of being fictitious, but the elementary constituents of Space and Time, as arrived at by a process which we have described already

<sup>1</sup> J. Burnet, *Early Greek Philosophy* (London, 1908, ed. 2), p. 186.

as being partly imaginative and partly conceptual. That is, we suppose the process of division continued without end, and we think of any space as integrated out of points so as to be a continuum, and thus we use the concept of point. But points though in this way ideal are none the less real. They are not made by our thought but discovered by it. To repeat what has been said before, reality is not limited to sensible constituents but contains ideal and conceptual ones. The back of a solid object which we see in front, the taste of an orange which we feel or see are ideal, but they belong none the less to the real solid and the real orange. Likewise the concept or thought of a dog is as real a constituent of the dog as what makes him a singular thing. It is its structural plan. Like all the objects of our experience, any part of Space contains the two aspects of singularity and universality. It is itself and it follows a law of structure. Points are singular, but they have such structure as becomes a point and are so far universal. In like manner, the figures of the mathematician, straight lines, triangles, conic sections, etc., are discovered by a process of idealisation, by an act of selection from the whole of Space. It is easy enough to recognise that this is the case with the geometrical figures taken apart from Time. For from Space we may select, by an ideal act, what Mr. Bradley calls an ideal experiment, the various geometrical figures. We do so whenever we draw them, and disregard the sensuous or sensible irregularities of our draughtsmanship, idealising these irregularities away. The construction of a parabola is an ideal drawing, or rather an ideal selection of points from Space in conformity with a certain law, expressed in the definition of the parabola. Such construction is in no sense a mere result of abstraction from sensible figures, but a discovery by thought that Space contains the geometrical figures which are thus dissected out of Space. Accordingly, in the history of the subject, geometry has proceeded from very simple figures like triangles to the discovery of more and more complex ones.

In maintaining that geometrical figures are ideal selections from Space, but really parts of that Space, I

may be thought guilty of inconsistency with my own principles. Experienced reality I have said is not Space, but Space-Time, of which the constituents are not spaces or times but motions. The geometer himself, it will be urged, treats his figures as the locus of motions. Now in physical reality we find no perfectly triangular or parabolic motions; there can be no meaning in the attempt to select such perfect movements from the motions which actually exist. Something might indeed be said in defence of the attempt: that where we have three intersecting directions we have the triangle. In the end, however, it will be seen that the notion of a direction prolonged into a straight line is incapable of defence if it is supposed to exist in the real world of motions. But in fact the objection taken is not relevant. The mathematician's Space is that Space which we have identified as the framework of real motions. It is within this Space, whose reality has been already maintained as essentially involved in Space-Time, that the mathematician draws his lines and circles and parabolas by an ideal selection. In this sense the figures of the geometer are real constructions, and geometry (and the same thing is true of the numbers of arithmetic) is a basal science of reality. When such figures are thought, the geometer can then proceed to treat his figures as the locus of points moving according to a certain law. But such conceptions in no way commit us to the belief that these movements, elaborated as it were by an afterthought, claim to be selected from the real world of motions.

Not different as conceptual and perceptual;

We can now ask ourselves the question, what is the relation of empirical Space to geometrical Space, and answer it by saying that they are the same, but that geometry treats Space differently from ordinary experience. Mathematical Space and Time are sometimes contrasted as conceptual or intelligible with empirical Space and Time as perceptual. The contrast, in the first place, is not strictly correct.<sup>1</sup> For Spaces and Times are not objects

<sup>1</sup> In an article, 'What do we mean by the question: Is our Space Euclidean?' in *Mind*, N.S. vol. xxiv. p. 472, Mr. C. D. Broad remarks similarly upon this distinction; though not to the same purpose.

of perception as trees or houses are. We have no sense for Space or Time, nor even in the proper meaning of sensation, for movement; they are apprehended *through* the objects of perception, the things which fill spaces and times, but not *by* sense. They are more elementary than percepts. Half our difficulties have arisen from attempting to regard Space as given to us by touch or sight instead of only through touch and sight. Hence it is that some have entertained the naïve and impossible notion that geometrical figures are got from material objects by a process of abstraction. They are got, as we have seen, by a selection from Space, which is always an ideal discovery. The only resemblance between figures of empirical Space and percepts is that they are individual or singular. Let us, however, overlook the inaccuracy of holding Space to be sensible at all, because the question is not ripe for our discussion in spite of the danger which such a notion involves that Space may be thought dependent on us in much the same way as colours and touches are supposed to be. It still remains true that the distinction of perceptual and conceptual is not sufficient to distinguish the Space of things from that of geometry. For empirical spaces besides being singular (and perceptual) are also conceptual. Each point is distinct from the other, because it is a point-instant and its time discriminates it; but empirical Space involves also the concept point or point-instant. Its point-instants have a universal character or structure. Like material or sensible empirical things, spaces (and times) are saturated with concepts. On the other hand, the Space of geometry also consists of points, and the figures which it deals with are different instances of figures of one and the same kind. There are various triangles and parabolas. These are the so-called 'mathematicals' of Plato, which he regarded (mistakenly as we shall see later) as intermediate between sensible things and universals. There are individual parabolas as well as the universal parabola. Thus empirical Space contains concepts and mathematical Space contains percepts. I am speaking here of the Space of elementary geometry, and am not considering as yet the speculative or arithmetised form of that science.



but differ-  
ently  
treated.

The difference lies not in there being a difference of empirical and geometrical Space but in the treatment of it. Geometry treats it wholly conceptually. Though there are many triangles and parabolas and points it considers the universal parabola or circle or point. It deals not with circles but with the circle or any circle. And it is able to do so, and is justified in doing so, because it abstracts from the Time of Space, though it does not as we have so often said exclude it. Conceiving the point without its time, it regards one point as the same as another. But that, even so, it does not exclude the real individuality of the point is evident from the fact that though its parabola has no definite place in space but may be anywhere, yet there is a relative individuality. For supposing the axis and the focus of the parabola fixed, all the other points of the curve are fixed in relation to it.

Geometry  
deals with  
figures, not  
Space.

This leads us on to a more significant point of difference which in the end is identical with the one we have mentioned. Geometry omits Time from its Space, or introduces it again by a quasi-spatial artifice in the use of a fourth co-ordinate, the time co-ordinate, and consequently it treats its Space conceptually. But geometry is in strictness not concerned with Space as such at all; that is the office of metaphysics. Geometry is concerned with figures in Space; its subject matter is the various empirical or varying determinations of that *a priori* material, Space. It is the empirical science of such figures which are its data, which accordingly, like any other empirical science, it attempts to weave into a consistent system. Metaphysics, on the other hand, is not a science of empirical figures in Space. But one of its problems is what is the nature of Space and how there are figures within it. In like manner, arithmetic is not concerned with number as such, but with the empirical numbers (of all kinds) which are discoverable within the region of number, as empirical or varying determinations of that *a priori* material. The mathematician is not as a mathematician concerned with these ultimate questions; he is only concerned with them, by the interchange of friendly offices between metaphysics and the special

sciences, by which the special sciences have been enabled to contribute so helpfully to metaphysics; because the student of a special department may also, if he has the eye for its ultimate questions, approach them with a fulness of knowledge. He may at the same time view these ultimate problems for his own purposes in a different light from the metaphysician, and this we shall see to be the case with the mathematician.<sup>1</sup> Now, just because the metaphysician deals with Space and number as such, it is of prime importance for him that individual points and circles are different from each other. But geometry not dealing with the problem of the individuality of its points and circles concerns itself with points and circles as such, and thus becomes wholly conceptual.

There are thus not two Spaces, the Space of elementary geometry and empirical Space, but one Space considered in metaphysics and mathematics with a different interest. The interest of mathematics is in the figures which are the empirical variations of the *a priori* Space; the interest of metaphysics is in the nature of Space itself. The question may be asked, How can a point or rather a point-instant be individual, each one different from all others, as metaphysics insists, and yet a point-instant be a universal? What makes the difference between the universal and its particulars? We have not yet reached the stage at which this inquiry can be answered. We shall see that the very difference of universal and particular depends on the fact that each point-instant is itself, and yet of the same character as others. At present it is enough to observe that the elementary universal, point-instant, is comparable to a proper name like John Smith, the whole meaning of which, as Mr. Bosanquet has said, is to indicate any particular individual; so that while any number of persons have that name, the name does not so much imply properties which are common to them all, but merely designates in each instance of its use a single individual, and is thus used in a different sense with each. I need hardly stop to reject the supposition

<sup>1</sup> The possible helpfulness of metaphysics, within its limitations, to the special sciences has not so generally been recognised by them.



that a point-instant is as it were the meeting-place of two concepts, point and instant, as if a combination of two concepts could confer individuality. For, firstly, no combination of concepts makes an individual. Secondly, point and instant are not concepts combined to make that of point-instant, as hard and yellow are combined in gold. For point and instant are not separable from one another, but each implies the other, and the concepts point and instant are merely elements distinguished in the concept point-instant. But all these matters belong strictly to a later stage of our inquiry. They are mentioned here only to anticipate difficulty.

Space and geometries of it.

The starting-point of geometry is then empirical Space presented in experience as what can only be described in conceptual terms as a continuum of points. The elaborate analysis of continuity by the speculative mathematicians does but explain what is given in this empirical form. But when I go on to ask what more precisely geometry does, and have regard to the history of the various geometries and to the most recent reduction of geometry to the status of an illustration of algebra, I find myself in danger of the fate which is said to overtake those who speak of mathematics without being mathematicians.<sup>1</sup> I have to do what I can, and I hope without presumption, with such information as is open to me. My object is the modest one of setting the empirical method of metaphysics as occupied with spaces and numbers in its relation first to elementary geometry of three dimensions, and next to the more generalised conceptions of mathematical procedure for which geometry is but a special application of arithmetic, or rather both geometry and arithmetic fall under one science of order.

Starting then with empirical Space, geometry, like

<sup>1</sup> "On the other hand," says Mr. A. N. Whitehead (*Introduction to Mathematics*, p. 113), "it must be said that, with hardly any exception, all the remarks on mathematics made by those philosophers who have possessed but a slight or hasty and late-acquired knowledge of it are entirely worthless, being either trivial or wrong." He is pointing the contrast with Descartes.

any other science, proceeds by means of axioms, definitions, and postulates, to discover what may be learnt about figures in space and, in general, about spatial relations. Thus Euclid from his premisses arrives at properties of triangles. The axioms and postulates of geometry are its hypotheses. Even the assumption of points when they are given a semi-independent existence in order to give support to the imagination is hypothetical. But Euclid's axioms are not the only ones out of which a body of geometrical truths can be constructed which still are applicable to empirical Space. There are many geometries though there is but one Space. Strictly speaking, it is only by a mistake of language that we speak of non-Euclidean Space or even of Euclidean Space; we have only Euclidean or non-Euclidean geometry. In the first place, while Euclidean geometry is metrical and involves magnitude and measurement, there is the more abstract geometry of position, or projective geometry, "which involves only the intersectional properties of points, lines, planes, etc.,"<sup>1</sup> and in metric geometry there are the modern systems which introduce notions of order or motion. But besides these there are the geometries, still three-dimensional, which are not Euclidean at all. The late H. Poincaré, as is well known, thought that it was impossible and indeed meaningless to ask whether Euclid or these other geometries were true. They differ not in respect of truth but of practical convenience. Euclid's is the most convenient. It is by no means involved in empirical Space that a straight line should be the shortest between two points. Poincaré imagines a spherical world where the temperature changes from centre to circumference, and bodies shrink or grow with the fall or rise of the temperature. Apparently such a geometry (in which the shortest lines are circles) would apply to empirical Space "within the possible error of observation."<sup>2</sup> In other words, the difference of its

<sup>1</sup> *Fundamental Concepts of Algebra and Geometry*, by J. Wesley Young, p. 135 (New York, 1911), to which I am deeply indebted in what follows for information.

<sup>2</sup> J. W. Young, *loc. cit.* p. 23.

conclusions from those of Euclidean geometry would not be capable of detection by our instruments.

This also, I understand, applies to the non-Euclidean geometries of Lobatchewsky and others, the so-called hyperbolic and elliptic geometries. Now, in the case of these geometries, the question does not arise whether they take us into a world different from our experienced Space. They are merely different systems of explaining, not the ultimate nature of Space, but its behaviour in detail. They employ different postulates. At the same time they introduce us to another feature of geometry and of mathematics generally, its method of generalisation. Euclidean geometry is only one instance of geometry of empirical Space. In it, a parallel may be drawn through any point outside a straight line to that line, and only one. In hyperbolic geometry there are two parallels; in elliptic geometry none. Or we may put the matter differently by reference to what is called the space-constant, or to what is less accurately spoken of as the 'curvature' of the Space. This constant has a finite value, positive or negative, in the other two geometries; in Euclidean geometry it tends to infinity. In the less accurate language the curvature of Euclidean space is zero, in the other two cases it is positive or negative. Now it is the generalising tendency of mathematics which has led ultimately to the reduction of geometry to arithmetic, and it raises the question in what sense the world of mathematical entities so conceived is real, whether it is not a neutral world, and empirical geometry only an application of its laws to sensible material.<sup>1</sup>

Generalised  
'Space.'

The simplest though not the most important example of such generalisation is found in geometries of more than three dimensions. Dimensionality, as Mr. Young

<sup>1</sup> "The geometrical system constructed upon these foundations (i.e. those of Lobatchewsky and Bolyai) is as consistent as that of Euclid. Not only so, but by a proper choice of a parameter entering into it, this system can be made to describe and agree with the external relations of things" (H. S. Carslaw, *Elements of Non-Euclidean Plane Geometry and Trigonometry*, London, 1916).

points out,<sup>1</sup> is an idea of order. A point by its motion generates a straight line, a line a plane, a plane solid Space, and this exhausts all the points of Space. We may think then of Space as a class of points arranged in three orders or dimensions. - But this notion, once drawn from empirical Space, may be extended or generalised; and we may think of a class of any number of dimensions which will have its geometry or be a new so-called 'Space.' We have taken a notion and generalised it, cutting it loose as it were from its attachments to the one empirical Space. Such generalisation is of the very life of mathematics, and its most important example is the process by which the notion of number has been extended. The study of numbers begins with the integral numbers, however they are conceived; but the notion of number has been extended by successive steps, so that there have been included in the number-system fractions as well as integral rational numbers, negative as well as positive numbers, irrationals, imaginary numbers, complex numbers consisting of a rational combined with an irrational number, and now the class of infinite or transfinite numbers. All these symbols have been so defined as to preserve the general laws of ordinary numbers, and great advances in the understanding of numbers have been marked by successful definitions, like the famous definition of an irrational number by R. Dedekind. To a certain extent it may be sufficient to describe these numbers as conventional, but that they are not mere conventions is shown partly by their having been suggested in some cases by geometry (as incommensurable numbers, for example, by the relation of magnitude between the side and the diagonal of a square); partly by the possibility of interpreting them geometrically. Mr. Young quotes a saying of Prof. Klein, that it looks as though the algebraical symbols were more reasonable than the men who employed them.<sup>2</sup>

Now I assume that the notion of an  $n$ -dimensional geometry is fruitful and profitable as a topic of inquiry. And if so, it seems to me to be as unreasonable to deny

<sup>1</sup> *Loc. cit.* p. 170.

<sup>2</sup> P. 112.

the value of it, which some philosophers are inclined to do, as it would be to reject imaginaries because there are no imaginary points in real Space. What we have in both cases alike is the investigation of certain notions for their own sakes when taken apart from their attachments; and the question rather is not whether they are legitimate, for I do not see how their legitimacy can be questioned, but the much more interesting question of whether they ever lose their original connection with the empirical so as to constitute a 'neutral' world of thought which is neither physical nor mental.

A product  
of art.

This question, so far as it is raised, even at this stage appears to admit of an answer. The idea of dimensionality taken by itself is combined with that of number, and a system is constructed by thought of elements in an  $n$ -dimensional total, and the consequences are worked out of this assumption. The systems are not, properly speaking, Spaces at all, nor their elements points in the empirical sense, but three-dimensional Space may be treated as derived from such a 'Space,' e.g. from four-dimensional 'Space,' on the analogy of the derivation of two-dimensional Space (which after all is an abstraction) from three-dimensional Space. Now if we may assume for the moment what will appear later,<sup>1</sup> that integral number itself is but a conception founded in empirical Space-Time, what we have here is nothing more in kind than the imagination of a gold mountain or any other work of imagination, only that in imagination the elements are sensory and found in the sensory world, whereas thought liberates itself from this condition. If the notions of dimensionality and number are rooted in Space-Time, the construction of a more than three-dimensional 'Space' does not lead us into a neutral world but takes notions which are empirical at bottom and combines them by an act of our minds. But just as the arbitrary act of imagination by which

<sup>1</sup> It is a great disadvantage for me that I cannot anticipate the discussion of this point. Without it my assertion may appear to be dogma. See Book II. where number is described (as well as order) along with the other categories in its place.

we construct a chimaera leaves us still dealing with physical features, though combined in a way which is not verified in physical fact, so in these thought constructions we are dealing all the time with ideas belonging to the empirical world. No new or neutral world is established, but the freedom of thought gives rise to fresh combinations.

No one would admit that a chimaera belongs to a neutral world; but rather so far as it claims to be real its claims are a pretence. The question then we have to ask is, are such intellectual constructions as many-dimensional 'Spaces,' or imaginary numbers, merely imaginary or are they true. A chimaera is not true, though it may have its place in a world of art as a work of pure imagination; and it is not true because it does not follow the lines of nature in the organic world. But a concept which is founded in the nature of Space-Time may admit of extensions or generalisations which are the work of pure thought, and discovered by it, and yet being on the lines of nature in the empirical world of Space-Time may be coherent with the spatial or numerical system and, at whatever degree of remoteness, be applicable again to the nature from which it sprang. Thus, to take an instance which supposes very little acquaintance with geometry, the idea that all circles pass through the same two imaginary points at infinity is a pure construction of thought. It is founded on the general proposition that two curves of the second degree intersect each other in four points. Two intersecting circles also intersect at these circular points at infinity. But by the use of this intellectual construction we can pass by projection from properties of the circle to properties of the ellipse. Such intellectual constructions are thus not mere exercises of thought, like a chimaera, but are coherent with the system of thoughts which have correspondents in real Space. They have therefore a double value, first in themselves, and secondly in the application of them.

Now as to the various kinds of numbers which have been discovered and introduced into arithmetic in virtue



of the tendency towards that generality which, Mr. Whitehead says, the mathematician is always seeking,<sup>1</sup> their connection with the integral numbers has been observed above, where I have mentioned the fact that they admit of spatial interpretation. As to the usefulness of the extensions of the notion of dimensionality, I can but quote the words of Mr. Young (p. 174): "It may be stated without fear of contradiction that the study of such spaces has been of the greatest practical value, both in pure mathematics and in the applications of mathematics to the physical sciences."

Thus in one respect the extensions in which geometry deserts empirical Space and creates new 'Spaces,' or the constructions within the system of number, are, it would seem, comparable to the scaffoldings by the help of which we build great buildings or ships. They allow us to raise the structure with which we are concerned, and to come indirectly into contact with it. Sometimes, as in the scaffolding of a building, parts of the scaffolding may be inserted into the building itself which is being raised. Sometimes they may be detached like the great framework of steel within which a ship is built, such as one sees as one steams down the river at Belfast or other great dockyard. These are still material structures, and belong to the same world as the ships or buildings. In higher geometry or arithmetic we have in like manner works of art whose materials are derived from experienced Space-Time, however intricately combined by thought, and they also have their utility in their application. But in another respect the comparison is faulty. For the scaffoldings of houses and ships exist only in order to build houses or ships. But the mathematician's constructions are made for their own sakes and are discoveries within geometry and arithmetic itself; like all scientific constructions they have a value irrespective of utility. Still, also like them, they are based upon and draw their life from the empirical material with which they are in organic connection.

<sup>1</sup> *Introduction to Mathematics*, p. 82.

I am far from supposing that the notion of many-dimensional 'Spaces' is comparable in importance philosophically with the numerical constructions which have given us in arithmetic the irrational, imaginary, or transfinite, numbers. I am not able to judge. But it seems fairly clear that the intimacy of connection between the first set of constructions and the empirical world is much less than in the case of the second set. A four-dimensional 'Space' is not a Space at all, and it appears to be rather a means for discovery in three-dimensional Space than itself the discovery of something in the world of Space; rather a work of art than a discovery. But the numbers are discoveries within the system of numbers. My object, however, has not been to assign to these different constructions their grades of value; it has been no more than to indicate that they do not take us into a neutral world of thought but keep us still in contact with the one Space and Time which we apprehend in experience, and seek to understand in mathematics in their empirical determinations by the selective analysis and intellectual construction employed in mathematics. In other words, we are not entitled to say, because by generalisation we arrive at a world of thoughts, that that world of thought is for metaphysics a neutral world of which our empirical world is the manifestation under certain conditions of sensible experience; that empirical Space, for instance, is a particular example of a system of complex numbers. We have in fact started from the empirical world itself, in particular from empirical Space and Time, extended by thought the conceptions derived from it, and descended again to empirical Space. The procedure is legitimate, but it does not establish the primacy of a neutral world. Metaphysically, empirical Space and Time are themselves the foundation of this neutral world. There is however another problem set to us, which belongs to the theory of knowledge, that is to that chapter of metaphysics. We have to ask what kind of reality belongs to such thought-constructions, and this runs into the general question, what reality belongs to ideas and to hypotheses

Relation of the generalisations to empirical Space and Time.



and all assumptions and to mere imaginations and illusions, and ideas which are commonly called unreal, like a round square, which still remain objects of thought or we could not speak about them. Now it is only one solution that there is a world of neutral being simpler than the world of physical or mental things which exist. There may be the world of truth and error or art (suggested above) which is not to be characterised as neither physical nor mental but as both physical and mental.<sup>1</sup> For our present purpose it is enough to insist that metaphysically all these constructions are rooted in the empirical world of existence, and ultimately in empirical Space and Time.

But in order properly to understand what is implied in the generalisation by which geometry and arithmetic become one science, we must go further and discuss a fundamental question which has been reserved. Dimensionality is an idea of order and order is connected with relation. I have assumed provisionally that for empirical metaphysics order and number can be exhibited as derived from Space-Time and dependent on it. But we can only satisfy ourselves that the concepts of mathematics are still attached to empirical Space-Time by examining the view that Space and Time are relations and not as we have supposed a stuff. We shall then see that the concepts in which mathematics appears to move away from Space-Time are in the end saturated with the notion of Space-Time. We have thus to ask ourselves, what are relations in Space and Time, and under what conditions Space and Time can be treated as systems of relations.

<sup>1</sup> See later, Bk. III. ch. ix. A.

## CHAPTER VI

### RELATIONS IN SPACE AND TIME

THAT was a profound maxim of Hume, when inquiring into the value or the real existence of an idea to seek for the impression to which the idea corresponded. In more general language it is the maxim to seek the empirical basis of our ideas. It is true that Hume himself overlooked in experience facts which were in the language of Plato's *Republic* rolling about before his feet; and hence failing to find in experience any impression of the self or of causality, he was compelled to refer the ideas of self or causality to the imagination, though in the case of self, for instance, we can see that while he noticed the substantive conditions he overlooked the transitive ones, and missed the essential continuity of mind against which the perceptions are merely standing out in relief. A thorough-going empiricism accepts his formula, but having no prejudice in favour of the separate and distinct existences which attract our attention, insists that in surveying experience no items shall be omitted from the inventory.

Spatial  
relations  
exist within  
Space itself.

Following this maxim, if we ask what are relations in Space and Time the answer is not doubtful. They are themselves spaces and times. "Years ago," says James in one of the chapters of his book, *The Meaning of Truth* (chap. vi. 'A Word more about Truth,' pp. 138 ff.), "when T. H. Green's ideas were most influential, I was much troubled by his criticisms of English sensationalism. One of his disciples in particular would always say to me, 'Yes! *terms* may indeed be possibly sensational in origin; but *relations*, what are they but pure acts of the

intellect coming upon the sensations from above, and of a higher nature?' I well remember the sudden relief it gave me to perceive one day that *space*-relations at any rate were homogeneous with the terms between which they mediated. The terms were spaces and the relations were other intervening spaces." The same kind of feeling of relief may have been felt by many besides myself who were nursed in the teaching of Green and remember their training with gratitude, when they read the chapter in James's *Psychology* (vol. ii. pp. 148-53) where this truth was first stated by him; for example in the words, "The relation of direction of two points toward each other is the sensation of the line that joins the two points together." Other topics are raised by the form of the statement, whether the alternative is merely between relations conceived as the work of the mind or as given in experience, and whether the relation which is a space is really a sensation. These matters do not concern us, at any rate at present. Nor have we yet to ask whether what is said of spatial is not true of all relations, namely that they are of the same stuff as their terms. What does concern us is that relations between bits of Space are also spaces. The same answer applies plainly to Time. If the bits of Space are points they are connected by the points which intervene. A relation of space or time is a transaction into which the two terms, the points or lines or planes or whatever they may be, enter; and that transaction is itself spatial. Relations in space are possible because Space is itself a connected whole, and there are no parts of it which are disconnected from the rest. The relation of continuity itself between the points of space is the original datum that the points are empirically continuous, and the conceptual relation translates into conceptual terms this original continuity, first regarding the points as provisionally distinct and then correcting that provisional distinctness. The "impression"—the empirical fact—to which the idea of continuity corresponds is this given character of Space which we describe by the sophisticated and reflective name of continuity. Relations in space or spatial relations are thus not mere concepts,

still less mere words by which somehow we connect bits of space together. They are the concrete connections of these bits of space, and simple as Space is, it is (at least when taken along with its Time) as concrete as a rock or tree. Moreover, when we introduce into Space the element of Time which is intrinsic to it, relations of space become literally *transactions* between the spatial terms. All Space is process, and hence the spatial relation has what belongs to all relations, sense, so that the relation of *a* to *b* differs from the relation of *b* to *a*. Thus if *a* and *b* are points, the relation is the line between them, but that line is full of Time, and though it is the same space whether it relates *a* to *b* or *b* to *a*, it is not the same space-time or motion. The transaction has a different direction.

All relations which are spatial or temporal are thus contained within the Space and Time to which the terms belong. Space and Time, though absolute in the sense we have described, namely that spaces and times are in Newton's words their own places, are relational through and through, because it is one extension and it is one duration in which parts are distinguishable and are distinguished, not merely by us but intrinsically and of themselves: as we have seen through the action of Space and Time upon each other. Whether we call Space and Time a system of points and instants or of relations is therefore indifferent. Moreover, in any given case the relation may be of more interest than its terms. James has pointed out that while in general the relations between terms form fringes to the terms in our experience, so that the terms are substantive and the relations transitive, yet on occasion it may be the transition which is in the foreground—it may become substantival and the terms become its fringes. For instance the plot of a play may be distinct and impressive, and the persons shadowy, points of attachment to the plot. In a constitutional monarchy it is the relations of king and subjects which are substantive, the person of the king or of his subjects are merely the dim suggestions of things which the constitution unites.

Thus Space as extension and Time as duration are internally orderly, and they are orders, the one of co-existence and the other of succession, because order is a relation, and a comprehensive one, within extension and duration ; or rather it is a relation within Space-Time, for it implies sense, and neither Space alone nor Time alone possesses sense. In other words, given empirical Space-Time, order of the parts of Space-Time is a relation, in the meaning of transition from part to part. Just as conceptual continuity corresponds to empirical or apprehended continuity, so conceptual order determined by some law or principle corresponds, as a relation between points or other bits of space and time themselves, to the empirical transitions between those bits. These empirical transitions in virtue of which one part of space and time is between others are the "impressions" which are the originals of the conceptual order.

How far a science of order could be founded on this bare conception of ordered parts of Space-Time I do not know. But at any rate the more comprehensive theorems of speculative mathematics at the present time do not thus proceed. They appear to use the conception of Space and Time not as being stuffs, as we have taken them to be, within which there are relations of the parts of Space and Time themselves, but as relational in the sense that they are relations between *things* or entities. This is the antithesis between absolute and relational Space and Time.

Absolute  
and rela-  
tional  
Space  
and Time.

In the one philosophical view, the one which I have adopted, Space and Time are themselves entities, or rather there is one entity, Space-Time, and there are relations spatio-temporal within it. In the other, Space and Time are nothing but systems of relations between entities which are not themselves intrinsically spatio-temporal. In the simplest form of the doctrine they are relations between material points. They may be, as in some sense with Leibniz, relations between monads. But in every case the presupposition is of entities, which when the relations are introduced may then be said to be in Space

and Time. We are, it seems, at once transported into a logical world of entities and their relations which subsist, but do not belong in themselves to either physical or mental empirical existence. For it must be admitted, I think, that it would be impossible to take Space and Time as relations between, say, material bodies, and at the same time to postulate an absolute Space and Time in which the bodies exist. The physical bodies, besides standing in spatial and temporal relations to one another, must then stand in a new relation to the places they occupy. But this offers an insuperable difficulty. Space and Time cannot at once be entities in their own right and at the same time merely be relations between entities ; and the relation supposed between the place which is an entity and the physical body at that place is either a mere verbal convenience or it stands for nothing. All we can do is to define the place by means of relations between physical entities ; and this it is which has been attempted by Messrs. Whitehead and Russell in a construction of extraordinary ingenuity, expounded in Mr. Russell's recent book on *Our Knowledge of the External World*. There the elements of the construction of a point are various perspectives of a thing, which is usually said to be *at* that point, arranged in a certain order, these perspectives being themselves physical objects.

Not to enter minutely into details for which I am not competent, I may illustrate the character of this mathematical method by reference to the number system, which shows how completely the method takes its start from assumed entities. Cardinal numbers are defined by the independent investigation of Messrs. Frege and Russell as the class of classes similar to a given class. The number 2 is the class of all groups of two things, which may be ordered in a one-to-one correspondence with each other. From this definition of number in neutral terms, for entity is any object of thought whatever, we can proceed to define the whole system of real numbers ; first the fractions and then the surds, finally arriving at a purely logical definition of the system of real numbers, involving entities, certain relations of order,

and certain operations.<sup>1</sup> But once arrived at this point we may go farther. "It is possible, starting with the assumptions characterising the algebra of real numbers, to define a system of things which is abstractly equivalent to metric Euclidean geometry."<sup>2</sup> So that real algebra and ordinary geometry become abstractly identical. This is one stage in the arithmetisation of geometry which is the outstanding feature of recent mathematics. In the end, as I understand, there is but one science, arithmetic, and geometry is a special case of it.

It is no part of my purpose to question the legitimacy of this method. On the contrary, I take for granted that it is legitimate. Our question is whether it really does leave empirical Space behind it, and what light it throws on the difference, if any, between metaphysics and mathematics. For, as we have seen, in the simpler theory of mathematics which takes absolute Space and Time for granted, even if as fictions, geometry was concerned with the properties of figures and their relation to the principles adopted for convenience in the science, and the metaphysics of Space was an analysis of empirical Space; and the demarcation of the two sciences was fairly clear. But if it is claimed that mathematics at its best is not concerned with empirical Space at all, but with relations between entities, then we are threatened with one of two results. Either our metaphysics in dealing with empirical Space is concerned with a totally different subject from geometry, not merely treating the same topic in a different way or with a different interest, or else we must revise our conception of metaphysics and identify it in effect with mathematics or logic.

Assump-  
tions of  
relational  
theory.

We may most clearly realise the contrast of this method with the empirical method of metaphysics if we recur to the importunate question, What then is a relation if Space and Time are relations? Empirical metaphysics explains what relations are.<sup>3</sup> But the mathematical method can clearly not avail itself of the same answer. Relation is

<sup>1</sup> Young, *loc. cit.* p. 98.

<sup>2</sup> *Loc. cit.* p. 182.

<sup>3</sup> See later, Bk. II. ch. iv.

indeed the vaguest word in the philosophical vocabulary, and it is often a mere word or symbol indicating some connection or other which is left perfectly undefined; that is, relation is used as a mere thought, for which its equivalent in experience is not indicated. For Leibniz there is still an attachment left between the relations which are spatial and the Space we see. For empirical Space is but the confused perception by the senses of these intelligible relations. He never explains what the intelligible relations are. But our mathematical metaphysicians leave us in no doubt. "A relation," says Mr. Russell (*Principles of Mathematics*, p. 95), "is a concept which occurs in a proposition in which there are two terms not occurring as concepts, and in which the interchange of the two terms gives a different proposition." This is however a description of relation by its function in a proposition, and is a purely logical generalisation; it does not profess to say what relations are in themselves. To do this, we must have recourse to the method used in defining numbers, which gives us constructions of thought, in terms of empirical things, that are a substitute for the so-called things or relations of our empirical world. An admirable statement of the spirit of this method has been supplied by Mr. Russell himself in an article in *Scientia*.<sup>1</sup> Thus, for instance, if we define a point, *e.g.* the point at which a penny is, by an order among perspectives of the penny, we are in fact

<sup>1</sup> "Wherever possible, logical constructions are to be substituted for inferred entities [*e.g.*, the cardinal number of two equally numerous collections]. . . . The method by which the construction proceeds is closely analogous in these and all similar cases. Given a set of propositions nominally dealing with the supposed inferred entities, we observe the properties which are required of the supposed entities in order to make these propositions true. By dint of a little logical ingenuity, we then construct some logical function of less hypothetical entities which has the requisite properties. This constructed function we substitute for the supposed inferred entities, and thereby obtain a new and less doubtful interpretation of the body of propositions in question" ('The Relation of Sense-data to Physics,' Sec. vi. *Scientia*, 1914. The article is now reprinted in *Mysticism and Logic* (London, 1918); the reference is to pp. 155-6.

What I imply in the text is that number, thing, relation, are directly experienced, and that metaphysics has to describe what is thus directly experienced. This is attempted in Bk. II.



substituting for the empirical point an intelligible construction which, as it is maintained, can take its place in science. When a thing is defined as the class of its perspectives, a construction is supplied which serves all the purposes of the loose idea of an empirical thing which we carry about with us. A relation is defined upon the same method.<sup>1</sup> We are moving here in a highly generalised region of thoughts, used to indicate the empirical, but removed by thought from the empirical. The Humian question, What is the impression to which the idea of a relation (or that of a thing) corresponds, has lost its meaning. A thing or a relation such as we commonly suppose ourselves to apprehend empirically is replaced by a device of thought which enables us to handle them more effectively. Such constructions describe their object indirectly, and are quite unlike a hypothesis such as that of the ether, which however much an invention of thought professes to describe its object directly. As in the case of the theory of number, we seem to be in a logical or neutral world.

But we have cut our moorings to the empirical stuff of Space and Time only in appearance, and by an assumption the legitimacy of which is not in question, but which remains an assumption. The starting-point is entities or things which have being, and in the end this notion is a generalisation from material things or events. Now such things are supposed, on the relational doctrine, to be distinct from the Space and Time in which they are ordered. But there is an alternative hypothesis, the one which we have more than once suggested as involved with the empirical method here expounded. The hypothesis is that the simplest being is Space-Time itself, and that material things are but modes of this one simple being, finite complexes of Space-Time or motion, dowered with the qualities which are familiar to us in sensible experience. That hypothesis must justify itself in the sequel by its metaphysical success. But at least it is an alternative that cannot be overlooked. The neglect of it is traceable to the belief that we must choose

<sup>1</sup> *Principia Mathematica*, i. p. 211.

between an absolute Space and Time, which are alike the places of themselves and the places of material things, and, on the other hand, a spatial and temporal world which is a system of relations between things. As we have seen, we cannot combine these notions. But if things are bits of Space-Time, they are not entities with mere thought relations which correspond to empirical Space and Time; rather, we only proceed to speak of relations between them because they are from the beginning spatio-temporal and in spatio-temporal relations to one another.

I am not contending that this hypothesis, which is no new one but as old as the *Timaeus* of Plato with its construction of things out of elementary triangles, and has been revived in physics in our own day in a different form,<sup>1</sup> is established; but only that it is inevitable to an empirical metaphysics of Space and Time. Order is, as we have seen, a relation amongst these finite complexes within Space-Time. When we begin with developed material things, later in metaphysical (and actual) sequence than Space-Time itself, we are by an act of thought separating things from the matrix in which they are generated. When we do so we forget their origin, generalise them into entities, construct relations in thought between them, transport ourselves into a kind of neutral world by our thought, and elaborate complexes of neutral elements by which we can descend again to the spatio-temporal entities of sense. We can legitimately cut ourselves adrift from Space and Time because our data are themselves in their origin and ultimate being spatio-temporal, and the relations between them in their origin equally spatio-temporal. Thus we construct substitutes for Space and Time because our materials are thoughts of things and events in space and time. We appear to leave Space and Time behind us

Contrast  
with  
empirical  
theory.

<sup>1</sup> The reference is to the physical theory of the late Osborne Reynolds, according to which the universe is Space, and matter is comparable to a strain or a geological fault in this homogeneous medium. See his Rede Lecture, *On an Inversion of Ideas as to the Structure of the Universe*, Cambridge, 1903. Reynolds's theory that Space is granular in structure does not concern us here, but concerns the physicist.

and we do so; but our attachments are still to Space and Time, just as they were in extending the idea of dimensionality. Only here our contact is less direct. For dimensionality or order is implied in Space and Time, but in this later method we are basing ourselves on entities which are not implied *in* Space and Time but which do presuppose it. Indirect as the attachment is, yet it persists. Consequently, though we construct a thought of order or of an operation and interpret Space and Time in terms of order, we are but connecting thought entities by a relation which those entities in their real attachments already contain or imply. If our hypothesis is sound, order is as much a datum of Space-Time apprehension as continuity is, and in the same sense.

Thus the answer to the question, are Space and Time relations between things, must be that they may be so treated for certain purposes; but that they are so, really and metaphysically, only in a secondary sense, for that notion refers us back to the nature of the things between which they are said to be relations, and that nature already involves Space and Time. Until we discover what reality it is for which the word relation stands and in that sense define it, the notion of relation is a mere word or symbol. It is an invention of our thought, not something which we discover. The only account we can give of it is that relation is what obtains between a king and his subjects or a town and a village a mile away or a father and his son. But such an account suffers from a double weakness. By using the word 'between' it introduces a relation into the account of relation; and it substitutes for definition illustration. We may legitimately use the unanalysed conception of relation and of entity as the starting-point of a special science. But there still remains for another science the question what relation and entity are, and that science is metaphysics. So examined, we find that relations of space and time are intrinsically for metaphysics relations within Space and Time, that is within extension and duration. Accordingly the relational view as opposed to the absolute view of

Space and Time, whatever value it possesses for scientific purposes, is not intrinsically metaphysical.

We are now, however, in a position to contrast the metaphysical method with the mathematical. The method of metaphysics is analytical. It takes experience, that is, what is experienced (whether by way of contemplation or enjoyment), and dissects it into its constituents and discovers the relations of parts of experience to one another in the manner I have attempted to describe in the Introduction. But mathematics is essentially a method of generalisation. Partly that generalising spirit is evidenced by the extension of its concepts beyond their first illustrations. This has been noted already. But more than this, it is busy in discussing what may be learned about the simplest features of things. Mathematics as a science, says Mr. Whitehead, "commenced when first some one, probably a Greek, proved propositions about *any* things or about *some* things without specification of particular things. These propositions were first enunciated by the Greeks for geometry; and accordingly geometry was the great Greek mathematical science."<sup>1</sup> This is an admirable statement of the spirit of the science and of why it outgrew the limits of geometry. It also indicates why when mathematics is pushed to its farthest limits it becomes indistinguishable from logic. On this conception our starting-point is things, and we discuss their simplest and most general characters. They have being, are entities; they have number, order, and relation, and form classes. These are wide generalities about things. Accordingly geometry turns out in the end to be a specification of properties of number. In treating its subject mathematics proceeds analytically in the sense of any other science: it finds the simplest principles from which to proceed to the propositions it is concerned with. But it is not analytical to the death as metaphysics is. Existence, number and the like are for it simply general characters of things, categories of things, if the technical word be preferred. Now an analysis of

Mathematics and metaphysics of Space.

<sup>1</sup> *Introduction to Mathematics*, p. 14.

things in the metaphysical sense would seek to show if it can what the nature of relation or quantity or number is, and in what sense it enters into the constitution of things. But here in mathematics things are taken as the ultimates under their generalised name of beings or entities. They are then designated by descriptions. What can be said about things in their character of being the elements of number? Hence we have a definition of number by things and their correspondences. But metaphysics does not generalise about things but merely analyses them to discover their constituents. The categories become constituents of things for it, not names of systems into which things enter. Its method is a method not so much of description as of acquaintance.

Mathe-  
matics  
deals with  
extension;  
meta-  
physics  
with  
intension.

The same point may be expressed usefully in a different way by reference to the familiar distinction in logic between the extension and the intension of names. Mathematics is concerned with the extension of its terms, while metaphysics is concerned with their intension, and of course with the connection between the two. The most general description of thing is entity, the most general description of their behaviour to each other is relation. Things are grouped extensionally into classes; intensionally they are connected by their common nature. Number is therefore for the mathematician described in its extensional aspect; so is relation.<sup>1</sup> Now for metaphysics intension is prior to extension. When the science of extensional characters is completed, there still remains a science of intensional characters. It is not necessarily a greater or more important science. It is only ultimate.

The spirit by which mathematics has passed the limits of being merely the science of space and number, till it assumes the highly generalised form we have described, carries it still further, till in the end it becomes identical with formal logic. For logic also is concerned not with the analysis of things but with the forms of propositions

<sup>1</sup> Whitehead and Russell, *Princ. Math.*, Introduction, vol. i. p. 27. "Relations, like classes, are to be taken in *extension*, i.e. if R and S are relations which hold between the same pairs of terms, R and S are to be identical." Compare *ibid.* p. 211.

in which the connections of things are expressed. Hence at the end pure mathematics is defined by one of its most eminent exponents as the class of all propositions of the form ' $p$  implies  $q$ ,' where  $p$  and  $q$  are themselves propositions.<sup>1</sup>

Mathematics is a term which clearly has different meanings, and the speculative conception of it endeavours to include the other meanings. But it is remarkable that as the science becomes more and more advanced, its affinity to empirical metaphysics becomes not closer but less intimate. The simple geometry and arithmetic which purported to deal with Space and quantity were very near to empirical metaphysics, for Space and Time of which they described the properties are for metaphysics the simplest characters of things. But in the more generalised conception, the two sciences drift apart. It is true that still mathematics deals with some of the most general properties of things, their categories. And so far it is in the same position towards metaphysics as before. But Space and Time have now been victoriously reduced to relations, while experiential metaphysics regards them as constituents and the simplest constituents of things. Hence it was that we were obliged to show that in cutting itself loose from Space and Time mathematics was like a captive balloon. It gained the advantage of its altitude and comprehensive view and discovered much that was hidden from the dweller upon the earth. But it needed to be reminded of the rope which held it to the earth from which it rose. Without that reminder either mathematics parts company from experiential metaphysics or metaphysics must give up the claim to be purely analytical of the given world.

Now it is this last calamity with which metaphysics is threatened, and I add some remarks upon the point in order to illustrate further the conception of experiential metaphysics. For the mathematical philosopher, mathematics and logic and metaphysics become in the end, except for minor qualifications, identical. Hence philosophy has been described by Mr. Russell as the

Is meta-  
physics of  
the possible  
or the  
actual?

<sup>1</sup> Russell, *Principles of Mathematics*, p. 3.

science of the possible.<sup>1</sup> This is the inevitable outcome of beginning with things or entities and generalising on that basis. Our empirical world is one of many possible worlds, as Leibniz thought in his time. But all possible worlds conform to metaphysics. For us, on the contrary, metaphysics is the science of the actual world, though only of the *a priori* features of it. The conception of possible worlds is an extension from the actual world in which something vital has been left out by an abstraction. That vital element is Space-Time. For Space-Time is one, and when you cut things from their anchors in the one sea, and regard the sea as relations between the vessels which ride in it and without which they would not serve the office of ships, you may learn much and of the last value about the relations of things, but it will not be metaphysics. Thus the possible world, in the sense in which there can be many such, is not something to which we must add something in order to get the actual world. I am not sure whether Kant was not guilty of a mere pun when he said that any addition to the possible would be outside the possible and thus impossible. But at any rate the added element must be a foreign one, not already subsumed within the possible. And once more we encounter the difficulty, which if my interest here were critical or polemical it might be profitable to expound, of descending from the possible to the actual, when you have cut the rope of the balloon.

The need  
for meta-  
physics.

Nothing that I have written is intended to suggest any suspicion of the legitimacy or usefulness of the speculative method in mathematics. On the contrary I have been careful to say the opposite. Once more, as in the case of many-dimensional 'Space,' it would seem to me not only presumptuous on my part but idle on the part of any philosopher to question these achievements. Where I have been able to follow these speculations I have found them, as for instance in the famous definition of cardinal number and its consequences,

<sup>1</sup> "On Scientific Method in Philosophy" (Herbert Spencer Lecture), Oxford, 1914, p. 17. Reprinted in *Mysticism and Logic*, p. 111.

illuminating. My business has consisted merely in indicating where the mathematical method in the treatment of such topics differs from that of empirical metaphysics; and in particular that the neutral world of number and logic is only provisionally neutral and is in truth still tied to the empirical stuff of Space-Time. Suppose it to be true that number is in its essence, as I believe, dependent on Space-Time, is the conception, we may ask, of Messrs. Frege and Russell to be regarded as a fiction? We may revert once more to the previous question, when a fiction is fictitious. If this doctrine is substituted for the analysis of number as performed by metaphysics as a complete and final analysis of that conception it would doubtless contain a fictitious element. Or, as this topic has not yet been explained, if the conception of Space as relations between things is intended not merely as supplying a working scientific substitute for the ordinary notion of extension but to displace empirical Space with its internal relations, the conception is fictitious. But if not, and if it serves within its own domain and for its own purpose to acquire knowledge not otherwise attainable, how can it be fictitious? I venture to add as regards the construction of points in space and time and physical things out of relations between sensibles proposed recently by Messrs. Whitehead and Russell, that if it bears out the hopes of its inventors and provides a fruitful instrument of discovery it will have irrespectively of its metaphysical soundness or sufficiency established its claim to acceptance. "Any method," we may be reminded, "which leads to true knowledge must be called a scientific method."<sup>1</sup> Only, till its metaphysical sufficiency is proved it would needs have to be content with the name of science. For Space and Time may be considered as relations between things without distortion of fact. Now the sciences exist by selecting certain departments or features of reality for investigation, and this applies to metaphysics among the rest. They are only subject to correction so far as their subject matter

<sup>1</sup> A. Schuster, Presidential Address to British Association, 1916.



is distorted by the selection. But to omit is not necessarily to distort.

On the other hand, if a method proper to a particular science is converted into a metaphysical method it may be defective or false. This is why I ventured to say of Minkowski's Space-Time,<sup>1</sup> as a four-dimensional whole which admitted of infinite Spaces, that it was a mathematical representation of facts, but that it did not justly imply that the Universe was a four-dimensional one, because it overlooked the mutual implication of Space and Time with each other. If it were so understood it would contain a fictitious element. As it is, it contains an element which is not fictitious but only scientifically artificial.

Summary.

We may then sum up this long inquiry in the brief statement that whether in physics, in psychology, or in mathematics, we are dealing in different degrees of directness with one and the same Space and Time ; and that these two, Space and Time, are in reality one : that they are the same reality considered under different attributes. What is contemplated as physical Space-Time is enjoyed as mental space-time. And however much the more generalised mathematics may seem to take us away from this empirical Space-Time, its neutral world is filled with the characters of Space-Time, which for its own purposes it does not discuss. To parody a famous saying, a little mathematics leaves us still in direct contact with Space-Time which it conceptualises. A great deal more takes us away from it. But reviewed by metaphysics it brings us back to Space-Time again, even apart from its success in application. Thus if we are asked the question what do you mean by Space and Time ? Do you mean by it physical Space and Time, extension and duration, or mental space and time which you experience in your mind (if Space be allowed so to be experienced), or do you mean by it the orders of relations which mathematics investigates ? The answer is, that we mean all these things indifferently, for in the end they are one.

<sup>1</sup> Above, Bk. I. ch. i. p. 59.

## BOOK II

### THE CATEGORIES

## CHAPTER I

### NATURE OF THE CATEGORIES

SPACE-TIME then is in Kantian language an infinite given whole, that is to say, it is experienced as such, where the term experience includes thought as well as sensible experience. Its elements are represented conceptually as point-instants or bare events; and we have added the hypothesis that other empirical things or existents are groupings of such events, whirlpools within that ocean, or they are crystals in that matrix. Only whereas a crystal may be separated from its matrix, existents never can; they remain swimming in the medium of Space-Time. Their very being is continuity; they are themselves continuously connected groupings of motions, and they are connected through the circumambient Space-Time with other such groupings or complexes. In less metaphorical language, they are complexes of motion differentiated within the one all-containing and all-encompassing system of motion. Primarily, therefore, empirical existents are spatio-temporal and remain so to the end. But with certain groupings of motion, certain spatio-temporal complexes, there are correlated what we call qualities, such as materiality, life, colour, consciousness. What the exact relation is between the quality and its spatio-temporal basis is to be the subject matter of a part of the next Book. We shall have to ask there whether it is fitly to be described as mere correlation or is still more intimate. The brief description contained in the name correlation is sufficient for our present purposes. Finite existents so understood, with their correlated qualities, are the things and

Categories  
and  
Qualities.

events of our ordinary experience, moving about or happening in Space-Time, and endowed with qualities the laws of which it is the office of the special sciences to discover and co-ordinate. So much by way of explanation of our hypothesis as to empirical existence.

Unlike the hypothesis of the Introduction, (that the world of things might be treated as existing in its own right and not dependent on the mind,) which is a hypothesis of method; it is a hypothesis as to the nature of things, or, in ordinary language, one of substance, not merely of method. In order to avoid the constant use of the long phrase empirical existents, I shall speak simply of existents. These include not only ordinary finites but also point-instants which are the limiting cases at which we arrive in infinite division, and infinities like infinite lines or numbers, which are the limiting cases in the other direction; and for this reason, in order to include these two classes of existents which involve the notion of infinitude, I speak of existents rather than of finites. But while there will be much to say of point-instants, I shall for the most part disregard infinities till a later stage, and then touch upon them only briefly.<sup>1</sup>

Now amongst the characters of empirical existents there is a clear distinction between those which are variable and those which are pervasive. Some things possess life, others not. Some things are red, others green or yellow; some are sweet, others sour. Some have colour but no taste. Matter has mass but is not conscious. These characters are what have been called above qualities, and because they vary from thing to thing they may be called empirical characters. But there are other characters which are pervasive and belong in some form to all existents whatever. Such are identity (numerical identity for example), substance, diversity, magnitude, even number. Moreover, not only are these characters of what we commonly call things, but they are characters of all existents whatever, that is to say of everything, where the word thing is

<sup>1</sup> Bk. IV. ch. i. Some remarks upon point-instants and infinities will be found in ch. ix. of Bk. II. pp. 324 ff.

equivalent to any finite object of experience. Thus not only is a living thing an extended substance of a certain magnitude and number of parts; but a life itself, if you consider it, or so far as you can consider it, without direct reference to its body whose life it is, is extended, a substance, and possessed of magnitude, and moreover it is spread out into a multiplicity of parts and therefore contains number. Even mind, now that we have satisfied ourselves of its extended character in its enjoyment of itself, possesses these characters.

It is true the pervasive characters also undergo variation according to the empirical circumstances. The wax is always extended, but its particular magnitude and shape change when it is melted. Still, it retains some extension and magnitude and shape in all its empirical transformations. An earthquake may last a long or short time, an illumination may be constant or intermittent. But they are never without temporal character. Such empirical variations of the pervasive characters of things may be called primary qualities in distinction from the secondary qualities, where the phrase covers not only the traditional secondary qualities of matter but qualities like life or consciousness. These qualities may be present in one thing and absent from another, and differ in this respect from the empirical variations of the pervasive characters.

The pervasive characters of existents are what are known from Kant's usage as the categories of experience, and I shall call them, in distinction from the empirical ones or qualities, categorial characters. They may also be called the *a priori* or non-empirical characters. But the contrast must be taken at its face value as a distinction within the characters of experienced things. It does not imply that *a priori* or categorial characters, because not empirical, are not experienced. On the contrary, they are the essential and universal constituents of whatever is experienced, and in the wider sense of that term are therefore empirical. It was in this wider sense that philosophy was described as the empirical (or experiential) study of the non-empirical. The word categorial is not

so much exposed to misunderstanding as non-empirical or in consequence of its history *a priori*; and I shall most frequently employ it. At any rate the two classes of characters are distinguished within experience itself.

These categories then are the prerogative characters of things which run through all the rest as the warp on which the others are woven. Or, to vary the metaphor, they are the grey or neutral-coloured canvas on which the bright colours of the universe are embroidered. The primary 'qualities' are variations of them in empirical circumstance. The secondary qualities are correlated with complexities in the primary qualities themselves. Life is correlated with physical and chemical movements, themselves reducible to complexities of more elementary movements. Mind is correlated in turn with vital movements of a certain sort. Colour (whether it is partly dependent upon mind or not) corresponds, it is thought, to vibrations in a hypothetical medium, the ether, which hypothetically (and there is reason to think, superfluously) fills all Space. The categories are thus the groundwork of all empirical reality; what Plato called the highest kinds of beings (μέγιστα γένη τῶν ὄντων). According to his latest interpreter, the interest of these highest kinds displaced in his latest writings that of the Forms of sensible things; and justly. For the Forms for all their eternal nature are, as compared with the categories, empirical—the form of dog in which individual dogs participate or which they imitate, but which trees do not; the form of tree, or the form of justice, and the like. These are empirical universals. But the categories are not only universals, but, though I do not know if Plato would have said so, are truly universal in the sense that all existents partake of them.

Why the categories are pervasive: not because they are due to mind;

The most remarkable feature of the categories which is disclosed to inspection is that they are common to mind and to physical and generally non-mental things. Consider mind as it is known by direct acquaintance, that is by enjoyment, without the addition of indirect knowledge from any source, whether from reflective experience about

mind, or from speculative theory. It has identity, is a substance, exhibits causality, etc. Something has been said of this in the introductory chapter and need not be repeated. What is the meaning of this presence of the categories not only in the contemplated but the enjoyed?

One way of solving this problem is to say that the mind is aware of the categories in its experience of itself, and then imputes them to its objects. Whether this answer has ever been attempted on a thorough-going scale, I do not know. But it has often been attempted in respect of the categories of causality and substance in particular. We find these characters in ourselves, and we interpret things, it is said, in our own likeness and find that the interpretation is successful. Now it is certain that experience of our own minds and experience of external things play upon each other reciprocally, reinforce and elucidate each other. When we have learned in ourselves the continuity, of a decision with its motives, of the issue of a train of thought with its premisses, of the mere unfolding of an idea in its details with the vague and implicit apprehension of the same idea, and particularly the continuity of our performances with our intentions; we can then look to external things and events to see whether there is not such continuity also there, the same definite order of succession. Or, again, whether in things there is not the like permanence in change that we can so easily detect in our enjoyment of ourselves. We speak then of causality or substance in external things, of physical causality and physical substances; and having these conceptions we come back to our own minds and ask whether we ourselves are not subject to physical causation, or are not substances in the same sense as external things, and we may thus raise problems which seem to us of great difficulty. Out of this interplay of mind and things it follows that while, on the one hand, we speak of force or power in physical things in language borrowed from our own wills; on the other hand, psychological terminology, as in such terms as apprehension or comprehension or conception, is largely derived from



experience of physical things or of the action of our bodies on physical things.

But the mutual interplay of our experience of mind and things, which is an indisputable fact, is very far from the imputation by the mind of its own characters to external things. One simple consideration is enough to show that we do not merely construe things on the analogy of ourselves. For there must be something in the things which makes the analogy valid, or which gives a handle to the alleged imputation. If all we observe in external events is uniform succession, to impute to one of them a power to produce the other is a fiction, the fiction which Hume set himself to discredit. It may be serviceable anthropomorphism, but it is not science nor philosophy. If there is no power traceable in things, then there is none; if the number of things is due to our counting, then there is no number in the things. The world then becomes indebted for its pervasive and prerogative characters to mind. Such a result is only satisfactory if the process is carried further, and if every character in things is attributed to mind, otherwise we could not understand how things should offer a reason to us to construe them so. I do not say this result is not true merely because it disagrees with our hypothesis of method, that we may treat mind as merely one of the many things in the universe. Yet at any rate we are bound before accepting it to see whether an explanation is not possible consistent with that hypothesis.

But now if there is something in the things which gives colour to the imputation, if for instance there is something in external things which is identical with the causal or substantial continuity which we find in mind, *when we do not take that experience to be more than it really is*, the imputation is unnecessary. Things may be numbered because they already contain number, not because they can be counted. On the contrary, they can be counted because they are countable and numerical. All the profit then that we can derive from the interplay of mind and things in becoming aware of the categories is that we may more easily derive from the enjoyed than

from the contemplated the nature of the categories; which categories they share in common. Of this liberty we shall avail ourselves.

Are we then to be content with the bare fact that the categories are unlike empirical characters in belonging to all things, and in particular in belonging to minds as well as to external things? Such a coincidence would be sufficiently remarkable, but it clamours for the discovery of a reason. The reason is that the categories prove upon examination to be fundamental properties or determinations of Space-Time itself, not taken as a whole, but in every portion of it. They belong to all existents because, if our hypothesis is sound, existents are in the end, and in their simplest terms, differentiations of Space-Time, the complexes of events generated within that matrix. If that hypothesis be sound we should expect to find the pervasive features of things in the characters of their ultimate foundation. Or to put the same thing in another way, when and if it is seen that the categorial characters of things are features of any bit of Space-Time as such, merely so far as it is spatio-temporal, we are forced to the further conclusion that the empirical characters of things, their qualities, are correlated with the empirical groupings in Space-Time, and that things with their qualities are, as our hypothesis supposes, complexes within Space-Time. The categories are, as it were, begotten by Time on Space. It will be our business to exhibit this proposition in some detail with respect to the various categories.

The gist of the formula will perhaps be understood best by meeting in advance a possible misunderstanding, to the danger of which I shall recur more than once as the inquiry proceeds. Spaces or times it will be said have, it is true, magnitude, have identity, have a universal character, have existence. The categories, or at least some of them, are indeed applicable to spaces and times or, if you will, bits of Space-Time. These are instances which fall under these various categories, just as trees and dogs and tables do. But since they are but instances

but because they are fundamental properties of Space-Time.

of the categories, the source of these categories must be found elsewhere. Now the clue to the understanding of our thesis is that the categories are not applicable as it were *ab extra* to spaces and times, but that they are applicable to things (including minds) because they flow from the nature of the space-times which they occupy or which they are. Applicability to space-times has no meaning for the categories, which are the features or determinations of the space-times themselves. I do not wish to anticipate too much, but a single instance may suffice. My mind exists at this moment because it occupies a certain portion of Space-Time, and that bare occupation is existence. Moreover, it is so far universal, that I remain in broad outlines the same mind whether I am here in Glasgow or there in Florence. That transplantation does not affect my identity. *Caelum non animum mutant qui trans mare currunt.*

Kant's  
treatment  
of the  
Categories.

In making this inquiry into the categories I have the good fortune to be able to make use for my own purposes, first, of the great later dialogues of Plato and, next, of Kant's work in the 'Schematism of the Categories' and above all in the 'Principles of the Understanding,' the most significant and fruitful chapter of the *Critique of Pure Reason*. But it would be at once tedious to the reader and an interruption to the argument to indicate in detail where I have been helped by Kant. Indeed it would seem at first sight as if little help were to be derived from him in this matter. For the drawbacks and deficiencies of Kant's doctrine of knowledge in general and of the categories in particular are obvious enough. The categories are referred, like the forms of Space and Time, to the mind, because it is thought that what Hutchison Stirling called the "empirical instruction" does not contain them already. They are universal and *a priori* and belong therefore to the understanding, and are sharply separated from sense and its forms. Nevertheless, Kant is far removed from the notion that we manufacture or work up objects of knowledge by means of the categories, still less that we impute these

forms to objects. They are for him veritable elements in objective knowledge, though they are the contribution of objective mind and not of the empirical instruction. And of still more importance and value is his effort to supply what he calls a "proof" of the principles of the understanding. In essentials the "proof" is this,<sup>1</sup> that objective external experience contains the categories in correspondence with the features which the experience of Time possesses as given in the inner sense,—such as that it has duration, determinate order, permanence, is fuller or less full<sup>2</sup> and the like. Since the form of external experience is Space, it is not so far a cry from this reasoning to the present doctrine, founded not on any pretence of proof or reasoning but on empirical inspection, that the categories are begotten by Time on Space, or are fundamental features of any space-time. For Space and Time are for Kant also forms of the mind, though the categories belong to understanding and they to sense.

Unfortunately the separation of the forms of sense or intuition from those of the understanding, and of both from the empirical instruction, gives to Kant's analysis an air of artificiality and unresolved miracle, and perhaps it is not to be wondered at that those who have regarded his formal procedure rather than the spirit of it have represented the forms as if they were instruments used in working up knowledge, as planes or chisels are used in carpentering wood. The artificial separation does not arise for us. For the categories are for us expressions of the nature of Space-Time itself, and on the other hand the empirical instruction consists of nothing but complexes of this same space-time stuff. All the elements of things we know are ultimately of the same stuff. But in spite of these difficulties I cannot think that this part of Kant's doctrine is so innocently inadequate as is often believed. And I am making these remarks not in order to fortify myself by his authority, which I certainly could

<sup>1</sup> At least this is one of the lines of thought Kant pursues in his proof.

<sup>2</sup> To which corresponds the category of intensive quantity.

not invoke, but to record a grateful conviction that with or after Plato there is nothing comparable in importance upon this subject with what may be learned from him, even by one who believes that mind which is Kant's source of categories has nothing whatever to do with the matter, and that mind is only a name for minds which are empirical things like other empirical things, and like them possess categorial characters and for the same reason as other things possess them, that they are all alike empirical complexes of space-time stuff. Leave out from Kant the objective mind with all the dependencies of that conception; and what he teaches us is mainly sound. It is true that the omission produces a considerable transformation, so considerable that the result would hardly be recognised as related to his doctrine by any affiliation of descent. But it is to be remembered that for a man of Kant's age the only method open to a philosopher, whether it was Kant or Reid, of indicating that the world of experience contains pervasive features as well as variable ones, was to refer this part of experience to mind in its objective character. Be this as it may, it is not always those who teach us most truth from whom we learn most, but those who best point the way to truth.

There are one or two questions of a general character about the categories which, to avoid repetition, will best be deferred till we have reviewed the categories in detail. For instance, whether at all, and if so in what sense, Space and Time themselves are to be called categories. Categorial they plainly are, and equally plainly Space-Time itself, which is the infinite matrix of all finites, is not a category. Again, it is plain from our description of the relation of empirical quality to Space-Time (that it is correlated with a certain complexity within Space-Time) that if our account be correct quality is not a category, and is no more than a comprehensive name for all the empirical qualities, and does not follow from the characters of Space-Time as such. Even for Kant, who regarded quality as a category, it only anticipates experience in respect of the intensity of the quality. It is in

fact only another name for the empirical element in things. But to avoid repetition at a later stage or imperfect discussion now, I omit these matters for the present.

We proceed then to describe the categories in order. The reader will bear in mind that they enter as constituent factors or as constitutive characters into every existent, whatever its quality. He needs only, in order to help himself in the abstract (that is elementary) inquiry, to think of empirical things, divest them of their qualitative colouring, and single out the categorial foundations of what the colouring is correlated with. While he may, if he chooses, regard also the embroidery he will be pleased to think only of the canvas.

## CHAPTER II

### IDENTITY, DIVERSITY, AND EXISTENCE

Numerical  
identity and  
diversity.

THERE are more senses than one of identity. There is, in the first place, bare or numerical identity, which is the identity of a thing with itself. Next, there is identity of kind, which is universality or generic identity. A dog is as dog generically identical with another dog. Thirdly, there is individual identity, which implies the blending of numerical and generic identity; an individual is a particular of a certain sort. Lastly, there is substantial identity, which, besides individuality as just described, contains the element of substance. Such substantial identity is what is commonly understood by a numerically identical individual. But it is really more complex as we shall see than merely being an individual. One of its instances is personal identity.

We are concerned at present with bare numerical identity, or self-identity. Any point-instant or group of them is as such self-identical, and the self-identity of anything is its occupation of a space-time. Diversity is the occupation of another space-time, that is another place with its time. One thing is diverse from another in so far as it occupies a different point-instant from another thing or more generally a different portion of space-time. The occupation of any space-time, that is self-identity, in distinction from any other space-time is existence or determinate being. Owing to the empirical continuity of Space-Time, any piece of Space-Time and consequently any self-identity is distinct from some other self-identity, that is, it possesses an other, and is thus an existent or has existence. Existence or determinate

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being is therefore identity in its relation to the other. It is, as Plato taught in the *Timaeus* through the mouth of his Pythagorean speaker, the union of the same and the other. Identity, diversity, and existence arise out of the intrinsic nature of Space-Time as a continuum of its parts which are space-times, or rather it arises out of the nature of any space-time, as being a part of Space-Time and therefore connected with other space-times.

Such union calls for no explanation; it is given with Space-Time itself. For Time makes Space distinct and Space makes Time distinct. We have in fact noted already that either of the two, Space and Time, may be regarded as supplying the element of diversity to the element of identity supplied by the other.<sup>1</sup> Any point-instant, or group of them, is therefore intrinsically itself, and other than some other, and indeed than every other, point-instant or group of them. It follows that existence is distinct from identity only in this reference or relation to the other. It therefore, to use another Platonic conception, "communicates" with the category of relation.

There is much in this if not brief yet abstract statement which calls for comment. Being is the occupation of space-time which also excludes other occupancy of space-time. This seems at first sight to be a flagrant piece of circular reasoning. When it is said that a point-instant is identical with itself and different from another, same or identical and other or different appear to be prior denominations of which point-instants are particular instances. Is not the point-instant declared to be the same as itself and other than a different point-instant? Though I have entered a warning against such a misapprehension in the preceding chapter, I must, at the risk of repetition, renew the warning here and perhaps later again. It is not because there is sameness and there is difference, and still less because we have the notion of sameness and difference, that a point-instant is the same (as itself) and different (from another), but because there are point-instants or

Defence  
against  
objections.

<sup>1</sup> See above, Bk I. ch. i. p. 60.



groups of them which are the parts of Space-Time that there is sameness and difference in existents. I am not starting from the world in which man exists with his clear-cut and reflective thoughts which he thinks to apply to particular things, but from the bare elements of the world, its primary stuff out of which things are made; and am accounting for the notions we possess, or rather verifying them, by reference to this stuff. In the skeleton universe of Space-Time we are attempting to detect what are the primitive features of pieces of that skeleton which appear in our experience clothed in the flesh and blood of what we call empirical things, with all their richness and complexity of qualities. It is not our human conceptions of things which metaphysics seeks to exhibit but the constitution of the world itself.

Even if we avoid the mistake of supposing that such categories as same and different are supplied by the mind, and urge the old objection in the form that same and different though not conceptions made by us are yet objective universals, are the highest forms of things, and point-instants or groups of them do but participate in these; the answer is that same and different (that is numerical sameness and difference) are indeed not only categorial characters intrinsic to any space-time but also universal, but that this consideration is at present irrelevant. The reason why same and different are categories is not that they are universals, but that they are characters which belong to any space-time and therefore to the existent which occupies it. We are concerned here with the specific nature of same and different, not with their universality. It is true that they are like all categories universal. Just as same and different communicate with relation, so also they communicate with the category of universality. There is a good sense in which a particular point-instant may be called a case of identity, that is of generic identity. An existent or being is a particular case of existence as a generic universal. The "this" in Mr. Bradley's language is a case of "thisness." We have yet to see what constitutes universality or generic identity, and we shall find that it too is founded in the

nature of Space-Time. But though existence is universal, a point-instant is not a mere case of the universal 'existence'; but it exists because it is a point-instant, and its existence is identical generically with the existence of other point-instants for a different reason. In other words, existents exist or are subject to the category of existence because they occupy space-times, and on our hypothesis are in their simplest determination spatio-temporal complexes; the occupation of their own space-time is a non-empirical or *a priori* determination of the very Space-Time of which things are made; their existence is another name for this occupancy, that is to say for being a piece of Space-Time. That existence may be resolved into its two elements of identity and difference, because a point-instant or group of them is in the first place what it is, and in the next place is not a mere isolated point of space or instant of time, but is saturated with Time or Space respectively, and driven thereby out of its isolation into relation with point-instants other than itself. The point-instants are so far from being merely instances of identity, difference, or existence, that these categories are but the conceptual shapes of real concrete determinations of things in their spatio-temporal character. We shall find this to be true of all the categories. They are not as it were adjectives or predicates of things; they stand for the simplest and most fundamental features (in the sense in which red is a feature of this rose) of things, and have the concreteness of Space-Time. Existence and numerical sameness and difference are the most elementary of these determinations. Consider the spatio-temporal structure which underlies any thing whatever, even if that thing be no more than a point-instant itself; and going to the direct experience of it, as clarified by reflection, you realise that the self-identity of the thing is nothing more nor less than the experienced fact that it is the bit of space-time which it is.

Existence, or determinate being, or being itself (for we shall see there is no being but determinate being), is the union of identity and difference. But this design-

Being as  
union of  
identity and  
difference.

nation of union must be received with caution. It is not properly a blending or mixture of identity and difference; nor on the other hand are identity and difference to be regarded as in reality one. The splendid image of the *Timaeus* in which the Demiurge is represented as pouring the Same and the Other into a bowl and creating Being (Ousia) from their mixture is not by us to be understood literally, if it was so understood by Timaeus. Being is an occupation of a space-time. It does not contain within itself the exclusion of other space-times. It contains of course within itself, when it is more than a point-instant, internal difference. But the exclusion of the other which makes identity into being is its relation not within itself but within Space-Time to other space-times. As in this relation identity is being. Being is not something new made up of the two, but is the same taken along with its relation of otherness. Neither is its otherness to be conceived as one with its identity. Its otherness is its relation to the other, and that relation is what we shall call later an intrinsic relation, without which the same would not be the same. But its sameness is one character and its otherness another. It would not be different without the other, and the other is external to it, and something new; not extrinsic to it (because of the nature of Space-Time) but yet not identical with it. Its identity is so far from being identical or one with its otherness that it would have no otherness except there were an other, and it is other than the other, not the same as the other. But the completer understanding of this, if it needs further elucidation, belongs to the inquiry into the category of relation.

Being and  
not-being.

Being it was said is the same as determinate being or existence. This means there is no such category as bare or neutral being to which some further determination must be added to make existence. When such neutral being is examined it will be found to stand for something different from real or categorial being, either for the relation of things to thought, or as a compendious name for the relations between terms in a proposition.

We might indeed distinguish bare being from determinate being by substituting in our exposition being for identity, and not-being for difference, and describing determinate being or existence as the union of being and not-being, that is as being in relation to other being. Bare being is then simple occupancy of a space-time. But over and above the loss of the phrase numerical identity, we gain nothing for clearness. For occupancy of a space-time is *ipso facto* exclusion of other space-times. There are no beings (occupants of space-times) which are not existents.

But the idea of bare being leads on conveniently to the subject of not-being, which is not the bare absence of being, not in the language of the logicians a privative conception, but is equivalent to other-being, that is occupation of a different space-time. It may be the occupation of any different portion in the whole remainder of Space-Time, as when we distinguish red from what is not-red and include under not-red anything whatever whether coloured or not which is not red. Or it may be and generally is the occupation of a different portion of Space-Time within the same 'universe of discourse,' as when not-red means any colour which excludes red. The subject more properly comes under the head of identity and difference of sort or kind (generic). But not-being whether numerical or generic is always different being, and remains being. If we try to think of not-being as if it were something wholly disparate from being, we are surreptitiously imagining or thinking some world which has being, that is, is within Space-Time, but of a different kind. A mere blank negation is nothing at all. The nothing we can think of and experience is not nothing-at-all but is an object of some kind and is a department of being. These are ancient considerations, derived from Plato's *Sophistes*. They have been revived in our day to much purpose by Mr. Bergson in an admirable passage of the *Creative Evolution*,<sup>1</sup> where he interprets disorder as a different order from what we call order, and repudiates the notion of nothing

<sup>1</sup> *Évolution créatrice*, ch. iv. pp. 297 ff. Eng. tr. pp. 232 ff.

except as something different from the something which constitutes the circle of our experience.

I may add that negation as a category is equivalent to not-being. Negation is not merely a subjective attitude of mind. That is only an instance of negation, in the region of mental acts. Negation or negativity is a real character of things, which means exclusion or rejection. Not-white is the character which excludes or is different from white. In this sense it is true that all determination is negation. For all definite occupation of space-time is other than other such occupation and excludes it.

Neutral  
being.

There is no category then of being other than that of determinate being or the existent. Since existence is occupancy of a space-time in exclusion of other occupancy, and since such occupation is always temporal, existence must not be limited to present existence but includes past and future. But various attempts might be or have been made to find a being which is wider or more comprehensive than existence. Such being may be called neutral being, but in no case is such neutral being a category, of which determinate being is a species, or closer determination.

Thus it may be said that there is neutral being which corresponds to the copula in judgment, and is what is meant whenever we say 'is.' But, in fact, the linguistic copula 'is' is appropriate only to certain propositions, those, namely, in which the terms are in the relation of subject and attribute. In some propositions, as Mr. Bradley has pointed out, it does not occur at all (interjectional ones); in others the relation of the terms as Mr. Russell insists is not expressed by the copula at all, but may be, for example, a relation of quantity, as in 'A exceeds B in intellect,' or of causality, as in 'Brutus killed Caesar.' A special importance has come to be attached to 'is' because with more or less ingenuity any proposition may be tortured artificially into the subject-attribute form. There is indeed in every proposition something implied which happens to be expressed by the copula in ordinary categorical propositions; but that something is not 'being' but the reality of whatever relation the proposition

expresses between its terms. For a proposition is the explicit analysis of a complex, and asserts the reality of the relation thus exhibited, whether it is the relation of substance and attribute, or causality, or the like.<sup>1</sup> What corresponds to the copula is thus not being but reality, and reality is at least existence or determinate being; it may be and is much more, but at any rate it is not less and wider than existence. It is not something simpler of which existence is a specialisation. The attempt to look for a category more pervasive than other categories is in truth vain, for categories as such are all alike pervasive, and belong to all things. There is much however to be said before the statement can be accepted that all propositions deal with existents; in particular, we have yet to consider how propositions which involve universals can be so described.

Being, *i.e.* neutral being, may be understood in a different sense as the object of thought. Whatever the mind thinks of has being or is 'formally objective.' A recent writer<sup>2</sup> proposes to say, accordingly, that there is a world or *summun genus* of 'subsistence,' of which what exists in space and time is a part. Determinate being would, according to this, be a special determination of 'subsistence' or being in the widest sense. The reason for introducing this notion is that besides true propositions there are errors and mere imaginations and

<sup>1</sup> Even the existential proposition, *e.g.* King George exists, means that the subject is a part of the whole reality of existence. For further remarks on the assertion of reality in the proposition, see later, Bk. III. ch. x. B.

<sup>2</sup> W. P. Montague, in *The New Realism* (New York, 1912); essay on 'A Theory of Truth and Error,' p. 253. I have borrowed the name 'neutral being' from Mr. Holt (see his essay in the same book, and his *Concept of Consciousness*), who uses it in a different sense. His neutral being is a being which is neither mental nor physical, the simplest form of which appears to be categories such as identity and difference. Also Mr. Montague, to whom I refer here, does not use the phrase neutral being at all, and he does not call his subsistence being, and perhaps would not do so (see his account of 'isness' on p. 263). Both his doctrine and Mr. Holt's seem to me, however, in the end to imply what I call neutral or bare being, the idea of something simpler than the world of Space-Time. I stand in many respects so close to them that I am the more anxious to make the real differences clear.

there are also what are now known, since Prof. Meinong's work on the subject,<sup>1</sup> as supposals, where there is neither truth nor error, since no belief is entertained; for example, 'that the Earth is flat is still maintained by certain persons'; 'it is reported that a victory has been gained,' in neither of which cases is the included proposition a belief, but a supposal. The consideration of this notion must be delayed till we have reached that special kind of empirical existent, the mind, and inquire into the relation of the subject of knowledge to the object. My contention against any being other than spatio-temporal is in fact that we begin at the wrong end if we start with the fact of errors or supposals which appear undoubtedly to be and yet not to be existent, so that we are led to conceive a being which is less, and wider, than existence. Whereas if we begin not with ourselves and what we think, but with what the world is in its simplest terms, of which world we are a part, we arrive at a different and less perplexing result. We shall find reason if we pursue this method to reject the notion that existence in Space and Time is something added to some more formal reality, call it being, call it subsistence, call it what corresponds to the 'is' of propositions; and to conclude on the contrary that such being is real or determinate being with something left out, that it implies the interference of the subject or the empirical mind with the real world in Space and Time; that it is not prior in analysis to reality but, rather, subsequent to it; and that error does not give us a new and more shadowy being than the spatio-temporal reality, but is the world of determinate being misread. Here for the present it is enough to note that being as the mere formal object of thought is a conception derived from the relation of the world to an empirical part of itself, the mind.

The use of the term subsistence in the above statement to describe bare being inclusive of being in space and time, is not in itself a matter of much consequence, but it is unfortunate because 'subsistence' is used by

<sup>1</sup> *Über Annahmen* (Leipzig, 1910, ed. 2). The notion of neutral being discussed in this paragraph is not imputed to Mr. Meinong.

Mr. Meinong (and the usage has become established through him) to describe not being as such or bare being, but that kind of being which contrasts with particular existence. Subsistence is, it is thought, timeless or eternal being, and it belongs to universals and to supposals. For instance, I may say that A exists; but it is urged that the proposition 'that A exists' does not itself exist. The battle of Waterloo was fought in 1815; but it is said, the fact that it was fought then is something independent of the time of the actual battle. The issue which is here raised is a different one; are universals or supposals or 'facts that' out of Time and Space? There is no doubt of the reality of these things; but have they or not being within Space-Time, or determinate being? We are about to show in the following chapter that universals are not timeless. But at any rate the word subsistence marks a distinction between two classes of objects of thought, two groups of reality, for which it is important to have a distinctive designation.

It may throw light on the denial here made of any being which is less than determinate being, as well as upon other matters, if I stop to consider briefly the famous doctrine with which Hegel's logic opens, that being is the same as not-being, and the two are merged into the category of becoming. If being were concrete being, something which has a place in the world of reality and not in the inventions of abstract thinking, the one thing which is more obviously true about it than another is that it is not identical with not-being, but different from it, that is, that it is not identical with the other but other than it. But being is not on this doctrine concrete. It stands for the least that can be said about anything, namely, that it is, and it is quite true that such being is indistinguishable from nothing. Instead of concluding that neither of them is anything at all, Hegel proceeds to declare their synthesis to be 'becoming,' which as he himself maintains is the first concrete notion. But how can bare abstract thoughts, abstractions as he allows them to be, combine or be combined to produce a concrete

The Hegelian identity of being and not-being.



one? or how could they be combined if they were identical and not different? Or if we suppose that we treat them as a mere analysis of becoming, how could a concrete real thought be analysed into two abstractions? Such an analysis is not comparable to our own analysis of Space-Time into the two elements of Space and Time. For each of these elements is concrete, and is only an abstraction when it is supposed to exclude the other. They are as concrete as body and life are in the organism. Had becoming, which is in fact motion or Space-Time in its simplest conceptual form, been analysed into being and non-being as different but mutually involved elements with becoming, becoming would have been equivalent to what we have called existence, for the existent is nothing but motion (that is Space-Time). But it would not be the thoughts themselves which produced their own unification, but the character of the concrete of which the concept becoming is the concept. It would indeed be a gross misreading of Hegel to suppose that he "manufactured the world out of categories." He is a perfectly concrete thinker, and to each thought corresponds a reality. But the inadequacy of his conception of the relation of thought to nature betrays itself at the outset of his triumphant procession of thoughts. Instead of conceiving the thoughts as the concepts of what is given in nature, he treats nature as a falling off from thought. But all true or concrete thought is tied down to nature; all its balloons are captive ones. The transitions from thought to thought are not made by thought itself, for transition is only possible to thoughts which are alive. The thoughts owe their connection not to thought but to the motions of which they are the thoughts. And when once the glamour is gone from the first transition from thesis (being) through antithesis (nothing) to synthesis (becoming) the principle of the whole series of logical forms which is founded on this principle, and really uses the contrast and identity of being and not-being, becomes suspect. No wonder that to some like Mr. Bradley these logical concepts appear to be shadows. Realities they are not, for they live in a region of thought divorced from its

material, which in the end is nothing but Space-Time. There is no way from logic to nature in Hegel, as his critics have often observed, except through a metaphor.<sup>1</sup>

The so-called Laws of Thought, regarded as metaphysical laws, follow at once from these considerations. The most important of them is the law of contradiction. Ultimately that law means that occupation of one piece of Space-Time is not occupation of a different one. A thing cannot be both A and not-A at once, for if so it would occupy two different space-times. Or more shortly the meaning is that one space-time is not another. I have not yet spoken of generic identity nor of substantial identity; but even now it is plain why the law is true where we speak of attributes and not of numerical identity or difference. For if a thing has the attribute A, that attribute is, as in the thing, a numerically distinct individual. The red of this rose is generically identical with other reds, but it is as in this rose individual. This rose cannot be both red and not-red, for otherwise it would in respect of its red be at once in a piece of Space-Time, and in a piece of Space-Time which the first piece excludes. Considered on the other hand as a law of our thinking, the law of contradiction means that the thinking of one object and the thinking of its contradictory occupy mutually exclusive places in the mental space-time.

The law of identity means that to occupy Space-Time is to occupy it, that a thing is itself. The law of excluded middle means in its metaphysical interpretation that given a special occupation of Space-Time, every occupation of

The law  
of contra-  
diction.

<sup>1</sup> It will be plain from the sequel why for me Hegel's conception of an evolution in thought of logical categories is mistaken. There is only an evolution in time of empirical existences which occupy space-times. Hegel's categories are in fact not categories at all, as they are understood here, the *a priori* constituents of all existences. They are rather the concepts of the various phases of natural existence: e.g. they include 'mechanism' and 'chemism' and 'life.' Or perhaps it is truer to say that the two notions of categories as *a priori* features, and categories as concepts of phases, of existence, are not clearly separated. Hence the apparent movement in thought is only artificial.

Space-Time is either that or belongs to the rest of Space-Time, and is another way of expressing the relation of any being to not-being.

These conclusions are obvious from the premisses, but they lead to another which will be unwelcome to a method of thought which has predominating influence at the present time. The criterion of reality (or truth) has been found in self-contradiction; what is self-contradictory cannot be ultimately real but only apparent. The principle is valid, if it means that what is self-contradictory is neither ultimately nor derivatively real but downright false; it derives its validity however not from any self-evidence, but from the experiential or empirical nature of Space-Time. The reason why nothing can be real which contradicts itself is not that this is an axiom of our thought, but that reality since it occupies a space-time does not occupy a different one. Deriving its validity then from Space-Time itself, it cannot be employed to undermine the reality of Space and Time and reduce them to appearances of an ultimate reality which is neither, but accounts for both. If Space-Time is the ground on which the criterion of contradiction is based, Space and Time are not themselves contradictory. To suppose so would be like invoking the authority of law to break law, or sinning against the conscience conscientiously.

To find out what is contradictory we must therefore have reference to experience itself, of which the principle of contradiction is the statement of the simplest feature. As reflected in our thinking, the test is that of internal self-contradiction or verbal inconsistency. Accordingly, the only way in which the test of contradiction can be successfully applied in the hands of Mr. Bradley to show that the categories, or even such notions as the self, which have been put forward as real in their own right are not so, is to show that they are inherently inconsistent. But this as has been pointed out<sup>1</sup> is not what has been

<sup>1</sup> See in particular a paper of Mr. G. F. Stout's, *Proceedings of the Aristotelian Society*, N.S. vol. ii., 'Alleged self-contradictions in the concept of relation,' especially section 2.

done. And if it could be done, the pretenders would not have even possessed a secondary reality but would be false. As a matter of fact what has been done is to show that these conceptions present great difficulties and the appearance of inconsistency to the understanding. But perhaps it is their inconsistency which is apparent and not they themselves. If we are right and all the categories are derived from the nature of Space-Time in any part of it, they are all real in their own right and ultimately, because Space-Time is the stuff of which all things are made and the categories are its simplest characters.

If such an answer were intended as a short way with absolute idealism, it would seem to the defenders of that method merely cavalier, because it starts from Space-Time as a given experience. The only way which is either possible or respectful is the long way. We have first to verify in detail the assertion that categories are properties of any space-time. Even then it will be urged that Space and Time are riddled with intolerable difficulties, although these difficulties may not amount to inherent self-contradiction. These difficulties must be examined and if possible removed. I am persuaded that the alleged inconsistencies of Space and Time arise from the separation of either of them from the other: from neglecting the temporal character of Space and the spatial character of Time; and that consequently the Space and Time which are thought to be inconsistent are not Space and Time at all, as Space and Time enter into real experience. But as the arguments against their reality turn on the ultimate unreality of relation, any further discussion is best deferred until we reach that category.

## CHAPTER III

### UNIVERSAL, PARTICULAR, AND INDIVIDUAL

Intro-  
ductory.

EXISTENCE is identity of place and time, or numerical identity, and distinct from other such identities. Universality is identity of kind. It is the existence or subsistence of a universal or concept which unites its particulars, which they imitate or in which they participate, or however else we may provisionally and traditionally describe the relation between the universal and its particulars—the transaction in which they are engaged. An individual is a particular as determined by its universal. Strictly speaking, there is no such thing as a particular or a universal. All things are individuals. But every individual possesses particularity which separates it from others of the same kind, or under the same universal; and it possesses universality which converts its bare particularity into individuality. Universality is thus a categorial character of all things. Such a thing need not be a thing with continued existence in time. It may be a sensory object, a flash of colour, or of sweetness, which is momentary and yet as being of a certain kind, red or sweet, is individual. A bare event or point-instant is particular as distinct from other events, but as qualified by the universal character of existence, its particularity is determined in total Space-Time and it is individual though from the nature of the case momentary and punctual. Can we discover in Space-Time any fundamental feature in virtue of which the empirical complexes within it possess universality and hence are individualised so that throughout the world we have existents embodying laws of construction?

Let us begin with an individual of a low type or organisation, for example a marble ball whose particularity may be supposed secured by its markings of colour. Let us suppose for simplicity that these do not change in colour, and let us disregard the intramolecular movements of the ball, confining our attention to its spherical form. The ball changes its place in space and time as the earth moves, and may also be displaced on the relatively resting earth. Its universality is that in all these changes it is unaffected in form; that wherever it is, it undergoes no distortion, and this arises from the uniformity of Space-Time or, as it may be expressed equivalently, from the constant 'curvature'<sup>1</sup> of Space. The same account applies obviously to balls which are turned out from one machine, so that they differ from one another, let us say, only in their place and time. They are identical in kind because owing to the constant curvature of Space their form is unaffected, and so far as form goes one can take the place of the other. A round ball does not become in another place elliptic or crooked.

We may next take a more highly organised individual, say a person whose life may be regarded as arranged on a certain plan. This is the best instance of the singular universal. Lotze compares it to the structure of a melody. It is such a plan of a man's personality which an artistic portrait endeavours to express, whereas a photograph gives only a picture of the man at a passing moment, unless by artistry of technique the hardness of the momentary outlines may be softened and the photograph

<sup>1</sup> This phrase, as I have had occasion to remark before, is inaccurate (see D. M. Y. Sommerville, *The Elements of Non-Euclidean Geometry*, London, 1914, ch. vi.). It is of course not used here with the assumption which the author imputes to many philosophers that three-dimensional geometry implies Space of four dimensions. That has been seen (Bk. I. ch. v.) in the first place not to be Space at all, in the next place to owe what reality it possesses to the work of thought. But the phrase is a convenient one. For the most part, however, I shall speak of the uniformity of Space. This is to be distinguished carefully from the supposed homogeneity or indifference of Space, which is declared to be characteristic of 'conceptual' in contrast with 'perceptual' Space. See before, Bk. I. ch. v. p. 152, and below, p. 216 n.

approximate to a portrait.<sup>1</sup> This individual person contains indeed besides universality the category of substantiality, or substantial identity, a category not yet to be investigated. He is highly complex, and the parts are in those conditions of motion to which, as I here assume, qualities are correlated. Yet in all his changes of space and time a certain plan of construction is preserved. It is preserved in his internal changes of body or mind, so that for instance he does not alter the colour of his skin from hour to hour like certain crustaceans; and so that a certain balance of actions is maintained. But it is also preserved not only in these subtle changes of space and time within his bodily outlines, but also in the grosser external transferences from position to position in space or time. I shall call a grouping or complex of point-instants or pure events a configuration of space-time or of motion. Now the universality of this highly complex person (as distinct from his substantiality) means as in the simpler case of the ball, that though at each particular moment of his life his configuration varies and is particular, the configuration follows a certain plan and remains within the limits of that plan. In other words, his configuration remains relatively unaltered while he changes in his place or time or both. However much he be transferred or otherwise more subtly changed internally in space-time he preserves a certain proportion of his parts and is undistorted. When he is so distorted as to forsake the plan he becomes (as happens for instance in double personality) a different individual. Once more, in this more difficult case, he being himself a highly intricate complex of space-time owes his universality to the uniformity of his medium, that is to the constant curvature of Space.

Generic  
universals.

Now the identification of universality with this uniformity was easy enough with our single ball, or our identical balls, for here the configuration was repeated exactly. But with the person the actual configuration

<sup>1</sup> Doubtless this comparison has often been made, but it seems to me as suggestive and true now as when I first heard it from the late Hermann Grimm at Berlin more than thirty years ago.

changes from moment to moment and only the plan of it persists. This difficulty which was slurred over above is still more pressing, when we come to the ordinary generic universal, like tree or dog or justice. Dogs vary in size and shape and disposition. How then can we speak of the universality of dog as a plan or form of configuration of space-time, since the spatio-temporal patterns of no two dogs can be superposed and fit into each other?

Let us follow our usual prescription and turn to our own minds which we know more intimately than external things. There, in our minds, we find habits which are dispositions of response to situations of a certain kind. On each occasion the response, let it be an act of will like telling the truth when we are asked a question, or the simpler instinctive response to a perception like holding our hands to catch a ball which is thrown to us—on each occasion the response is particular or rather individual, but it obeys a plan or uniform method. It varies on each occasion by modifications particular to that instance. It may be swift or slow, eager or reluctant, slight or intense; the hands move to one side or another with nicely adapted changes of direction according to the motion of the ball; the words are adjusted not merely to the subject of the question, but to the requirements, which vary in each case, of exactitude and sincerity or of that tactfulness in telling the truth which takes account of the mental condition of the questioner, and regards his intelligence and his feelings and susceptibilities, so that there is a fine art of truth-telling as there is of catching a cricket ball. But however great or fine the variations in conduct, they have their limits within the plan of the response which is uniform. The response proceeds with these allowances for modification, or rather with these necessities of modification, on established and constant mental lines which are also constant plans of direction within the neural space. We may tell the truth facing a person or with our back to him, but within that neural space which we enjoy in mind the configuration of the response follows a certain plan. In all the variations of particular response there is no distortion of the pattern of response.



Mental  
disposi-  
tions.

What mental dispositions in general are, in distinction from their effective realisation in actual conduct, I need not inquire too minutely. I am content to regard them as psychophysical, indicating by that word that being themselves physical they are ready upon occasion to start up into mental life. It may be that, as some think, there is a perpetual process of fainter actual functioning along the neural lines. It is at least certain that the disposition is not a bare physical one, but at least physiological. It is not represented merely by purely anatomical patterns and is something more than a mere physical arrangement, such as is supposed to exist in a permanently magnetised steel bar through the tilting of the molecules in one direction. It is more than this, because the elements which are tilted in our neural lines are living cells. This important question I must leave. But at any rate besides those mental habits which are purely psychophysical, or latent, we can detect conditions of mind which are actually conscious, and though not definite and individual but vaguely defined have a more special claim to be considered *mental* dispositions or schemes of response. The underlying psychophysical disposition may not be actualised in an individual mental response, but in a mental outline or scheme of one, which is a diagram of response, but yet is mental. It may betray or reveal itself in shoots of consciousness which are not so individual as if I were actually performing the action, but are of a specific sort or on a recognisable plan. I mean by the term specific, to take an illustration, that the vague premonitory shoots of consciousness which anticipate at times the actual winding up of my watch at night are recognisably different (I should say in 'direction') from the premonitory shoots of consciousness connected with some other habit, like turning off the electric light in my study before I go to bed. These attitudes, rather than actions, of mind can be verified most easily in the uneasiness which warns us to perform the action or reminds us that we have failed to do so. In each case the uneasiness is of a different sort, and has a vaguely specific direction.

The clearest instances, perhaps the only ones, of these

mental schemes in the proper sense, are afforded by the action of conceiving, of which concepts or universals are the compresent objects. Observation conducted first under ordinary conditions and then under the conditions of the laboratory<sup>1</sup> has convinced us of the existence of 'imageless thinking,' which seemed so inconceivable to some earlier psychologists. Though our thinking does not proceed without attachment to some particular of sense, it may be to a word, it may be to the button which we twist while we think, or the lock of hair which we pull to the distraction of our companions, it may be to some mere external circumstance contained in the conditions of the experiment; yet it may proceed without any individual embodiment or illustration of the thought itself:

By the pricking of my thumbs  
Something wicked this way comes.

The witch is a true psychologist. The pricking of her thumbs is the particular sensory experience to which the thought of something wicked (observe the conceptual expression) is attached though it is no image of wickedness.

Turn now from mental habits or universals to the non-mental universals which are found in external things. They are 'habits' of Space-Time, and empirical universals like dog or tree or justice are possible because Space-Time is uniform and behaves therefore on plans which are undistorted by difference of place and time. There is only one respect in which the transition from mental habits to habits of Space-Time appears to limp. Mental habits occur in assignable neural places, though the limits of these areas are extensible. But the habits of Space-Time are localised indifferently all over Space-Time. Given the appropriate empirical conditions a triangle or a dog may be drawn anywhere according to their universal plan of configuration. We have indicated in a previous chapter the reason for this difference

Habits of  
Space-  
Time.

<sup>1</sup> There is now a large literature on imageless thinking. I may cite in particular the earlier work of Mr. Stout in *Analytical Psychology*, vol. i. Bk. I. ch. iv., and the researches by Messrs. Ach, Buehler, H. J. Watt of the Würzburg School of the late O. Külpe.

between mind and Space-Time.<sup>1</sup> The mind is not like Space-Time an infinite but a finite whole. Moreover its consciousness of things is awaked through the senses with their highly specialised machinery of nerve endings and nerve centres and paths. For specific objects specific means of apprehension are necessary, and vision, taste and the other senses, and still more the complex patterns for apprehending complex objects have their specific lodgings in the brain. What is said here of mind or consciousness applies of course with proper qualifications to all kinds of finites, so far as these have specific methods of response to their surroundings. Such habits are localised in specific portions of the spatio-temporal structure; as will be clearer in the sequel. Further it follows as a consequence of the want of localisation of the habits of Space-Time to definite portions of it, that different habits may have certain parts of Space-Time in common, though not at the same time. Thus the same point may be the beginning of a circle or a parabola; though the point-instant will have different values in the different cases, because it will be the beginning of different lines of advance.

I may add that the comparison of universals with habits is not made for the first time by me, though I do not know that the comparison has been made with the same implications.<sup>2</sup>

Universality is therefore a category or determination of Space-Time. Every finite possesses universality or identity of kind in so far as it admits without distortion of repetition in Space-Time, that is, can itself undergo change of place or time or both without alteration, or can be replaced by some other finite. Empirical universals are plans of configuration of particulars which are identical in kind. They may be called patterns of con-

<sup>1</sup> Bk. I. ch. iv. pp. 139 f.

<sup>2</sup> Thus Mr. Bosanquet writes (*Principle of Individuality*, p. 40, note 3): "The universal is essentially a system or habit of self-adjusting response or reaction." My difference from him lies in the phrase "system or habit." A habit is for me not a system of its acts but the plan, or in extensional terms, the class of them. See below, pp. 233 ff.

figuration or, to use the old Greek word, 'forms' of Space-Time. They are essentially in their simplest terms spatio-temporal forms or shapes.

If this is true of empirical universals like dog or plant or triangle it is still more obviously true of the most comprehensive of all universals, the categories themselves, which are *a priori* plans of configuration. I am anticipating the complete verification that they all of them are fundamental determinations of any space-time. In so far as relation or substance or existence, etc., is an *a priori* determination of Space-Time, these are forms or plans or patterns of configuration of Space-Time or motion. They are the key plans of all plans of empirical determination. The rest of them excluding universality communicate with universality, and universality itself stands for the fact that everything has its form. We cannot say that universality itself is a universal any more than we can say that the empirical universal dog is a dog. Universality is the category in virtue of which there are universals, whether empirical or *a priori* ones.

Universality is thus the name of the constancy of any existent in Space-Time, so far as it is constant, that is, its freedom from distortion wherever it is in Space-Time, and this is equivalent to the uniformity of Space (or what is the same thing, Space-Time). Just as existence is the name for occupation of a space-time in relation to other occupation.

If it be objected that the uniformity of Space and with it Space-Time is after all only an empirical character and that there need not be such constancy, I can only answer that Space-Time though itself categorial or *a priori* is empirical in the sense of being presented in experience with certain characters. I should be content with this simple fact. It is true that a geometry may be imagined whose 'Space' is not uniform. But our Space is not such, whether the Euclidean or some other geometry be the closest approximation to the description of it. For I am not assuming Space to be flat, with zero curvature, but merely to have a constant curvature. In a 'Space' which is not uniform I do not see how there should be universals,

Why Space  
is uniform.

for each plan would suffer distortion as it was transferred.<sup>1</sup> The world would consist of nothing but particulars, not even of individuals, for there would be no meaning in the contrast of individual and particular without the idea of a plan of configuration. But if we seek to understand the deeper meaning of the constancy of Space and Space-Time we may refer to the relations set out in a previous chapter between Space and Time, though with the same feeling of modesty in our assurance as beset us there. Time as we saw was not an addition to Space, but the characters of Space were conformable to those of Time. It is the conformity of Space to the one-dimensional Time, which is uniform—flows uniformly as Newton said—that involves with it the uniformity of Space. Universality is thus, in

<sup>1</sup> More than one friendly critic has urged that if we can think of a Space of varying curvature, there must be at least one universal, that is the concept of the class of such curvatures; and consequently my contention that there are universals because there is uniformity or constant curvature breaks down in this instance. The answer which will be clearer from the 'objections and elucidations' which follow is from my point of view fairly clear. The notion of a variable curvature of Space is got from experience of Space with a constant one by a construction of thought, like four-dimensional Space. Because, being familiar with universals, we can universalise Space-curvature in thought, we are not therefore free to deny that universality as we know it in experience depends on constancy of curvature. Moreover, while there is a good meaning in the universal contained in the varying curvatures of curves in our Space, it is difficult to see what is the universal element in the varying curvatures of the supposed Space which itself varies in curvature. The supposed universal is rather comparable to colour in relation to the various colours, red, green, etc. There is no element colour in these of which red and green are variations. Colour is a collective name rather than a class one or a universal. Such a universal curvature is nothing then, as before, but a bare thought; and no conclusion can be drawn from the supposition of my critics. But, whether this last comparison be valid or not, I recall their attention to the real problem, which is how there can be sameness or generic identity at all. You may take these different entities, space-curvatures, however measured, and construct a new so-called 'Space' from them. But their generic identity is of your making. Unless they are the same in themselves there is no real universal of them. You may consider them as forming a class with the sameness called curvature. But you have still to ask the prior question how there can be classes of things at all. Sameness has to be accounted for before things can form a class. It is this fundamental question that the text endeavours to answer.

our drastic metaphor, begotten like the other categories by Time on Space. In all this the constancy or uniformity of Space-Time or Space is carefully to be separated from the notion of the bare homogeneity of Space or Time, in the sense that there is imagined to be no real difference between one part of Space or Time and another. This notion is justly the bugbear of philosophers; though some have thought to retain it by distinguishing between conceptual and perceptual Space or Time. I need not now revert to the errors which underlie this distinction, which would make conceptual Space a falsification of perceptual Space. But in fact we have seen that Space and Time differentiate each other: that every point differs from any other by its instant and every instant by its point. Point-instants are concepts but singular ones, and each point-instant is an individual. As Mr. Russell has observed, points seem all alike to us only because we have no interest in discriminating them. The uniformity of Space or Time or Space-Time does not mean this supposed conceptual indifference of point-instants but merely that a given plan of configuration is repeated in any part of Space-Time where it occurs without distortion.

We have first to enter a caveat against the old possibility of misunderstanding which has been noted from the beginning. Plans, it may be thought, of space-time are nothing but the universals of different patches of Space-Time, the circular plan, for example, the universal of all circular patches. They are but particular applications of a conceptual universal which is prior to Space and Time and is supplied from understanding or thought, it matters not how. Universality belongs to Space-Time but comes down upon it, either it may be imagined from mind or from some eternal region as the Forms are supposed to enter into Space by Timaeus. Our answer is the old one. It is not because there are universals that any space-time has a plan, but because Space-Time is uniform, or constant in curvature, and admits a plan that exists which are patches of space-time possess universality. Or the misunderstanding may take another form. A constant

Objections  
and eluci-  
dations.

curvature means that the curvature is the same, and there is a prior notion of generic sameness. I answer that the constancy of curvature is an experienced or empirical fact or character of Space-Time, and that it is this which makes particulars of a sort the same in different positions. Sameness (generic identity) follows from the constant curvature; the logical denomination of things follows from or expresses the real nature of Space-Time.

These are misunderstandings. There is however a different objection to meet which has much better pretensions to be heard. The very name of plan or pattern or form or law implies, it will be said, the idea of universality; and the problem is concealed by a word. For a plan is something of which many copies are possible. If only a definite configuration of space-time were concerned, like a right angle or a definite loudness of the note C, we might be content with a reference to the constancy of Space-Time. But when you allege that an acute angle at A and an obtuse angle at B are instances of one and the same plan or habit, the angular habit, you are really under the protection of a name introducing the universal 'angle.' For there is no one configuration of space-time which can be called an angle. Thus to account for the generic identity of angles you are introducing between the constancy of Space to which you appeal and the particular angles a universal under the name of a plan, which is the condition under which that constancy can be applied to individual angles of such great variation. The universal you say belongs to Space-Time as such, but a new universal is needed on your own showing to mediate between the particulars and Space-Time. This objection is highly relevant, and it is analogous to one of the kinds of objection taken in ancient Greece to the Forms under the name of the argument of the 'third man.'<sup>1</sup> Besides the individual men and the form Man there is a third man.

<sup>1</sup> There is a very instructive critical account of the various forms of the third man argument in a paper by Mr. A. E. Taylor on 'Parmenides, Zeno and Socrates,' in *Proceedings Arist. Soc.*, 1915-16, N.S. vol. xvi. I do not enter into the question, which among these arguments the above objection corresponds to. I think it is the argument from infinite regress used in the *Parmenides*.

But it is in truth groundless as directed against the present conception of universals. It arises only from the latitude of the universal in question. Angle means a configuration formed by two straight lines of divergent directions in a plane. The habit of Space-Time to which it is equivalent is the possibility of the existence of such a configuration at any point. The magnitude of the angle does not enter into the plan. If the universal were the limited one of an angle of  $60^\circ$ , there would be no variation of magnitude in the copies. The plan triangle allows for variation in the magnitude of angles and sides within the limits fixed by triangularity. The four-sided figure with equal sides is similarly a plan or pattern which is satisfied by the rhombus or the square.

What is true of the empirical universals of geometry, which have been chosen in these examples, is true in like manner of ordinary 'qualified' universals, like dog or tree or justice. The relation between the universal and the particulars is the same in these cases as the relation between the universal triangle or circle and the particular triangles or circles, which Plato called mathematical objects. For a particular dog is in the end a spatio-temporal configuration, where the groupings of motion are such as to have sensible qualities correlative with them. So regarded a particular dog differs from a particular triangle only in its much greater complexity. It too is spatially considered a geometrical figure, but of an order which is too complicated to be treated by the geometry of simpler figures. Particular triangles are perfectly rectilinear because the triangle is a figure ideally constructed within Space, or selected from it. But irregular as the contours of a dog may be, he is none the less a geometrical figure. Mathematical particulars are therefore not as Plato thought intermediate between sensible figures and universals. Sensible figures are only less simple mathematical ones. This is the whole of the difference. In any case whether it is with a mathematical or a qualified universal that we are concerned, there is no question of any plan mediating between the particular and the uniformity of Space-Time; the plan is an embodiment of that uniformity. The universality of the plan is the



capacity of Space-Time to respond on each occasion according to that plan.

Thus the universal is related to its particulars as the equation of a curve is related to the instances of it which may be obtained by varying the so-called constants in the equation. For example the equation to the parabola ( $y^2 = 4ax$ ) is universal as the formula which applies to all curves described by the formula, where the element  $a$  varies.<sup>1</sup> A more satisfactory statement still is that the equation of the second degree  $Ax^2 + By^2 + Cxy + Dx + Ey + F = 0$  is the universal of all conic sections which can be obtained by appropriate values in the capital letters. This brings out most clearly how the universal or plan is the key to the utmost range of variation not merely in magnitude but in configuration within the limits of the pattern configuration. For it includes under its formula such different configurations as the ellipse and the parabola and the hyperbola which yet are subject to the one more comprehensive pattern or habit of Space-Time. The formula of the circle whose centre is the origin  $x^2 + y^2 = r^2$  has a much smaller limit of variation in the magnitude of its one constant, while the equation  $x^2 + y^2 = 36$  is limited to the one definite kind of configuration.

It will be observed that I do not call the equation to the circle or the parabola the universal of the points of which the circle or parabola consists, the significance of which reservation will appear in another context.<sup>2</sup>

Subsistence  
and exist-  
ence.

It has not seemed to me necessary to insist that the universals of physical things are non-mental; for this is the only statement which is consistent with the whole spirit of our hypothesis, even if the mentality of Forms had not been summarily disposed of by Plato himself.<sup>3</sup> But what kind of reality, it may be asked, do universals possess? Half the difficulty, or perhaps all of it, disappears when once it is admitted that particulars are complexes of

<sup>1</sup> Cp. Lotze, *Logic*, § 117.

<sup>2</sup> Below, p. 235.

<sup>3</sup> *Parmenides*, 132 b. The argument is discussed fully in Mr. Taylor's paper just cited.

space-time and belong therefore to the same order or are of the same stuff as the universals which are plans of space-time. The objections taken to the conception that the particulars participate in the universals or imitate them, a conception which plays so great a part in the history of the theory of universals, vanish upon this doctrine. The argument of the 'third man' arose from the apparent separation of the form from its particulars because the particulars were sensible. But if sensibles are made of space-time stuff they follow their spatio-temporal pattern, and whether we call the relation one of imitation or participation, either designation is valid and true. Of the two, participation is to be preferred because imitation suggests a separate independent reality of the universal, and participation means that the plan is not copied but modified to suit the special circumstances of time and place.

To say with Aristotle in his mood of antagonism to his master that the universal is predicable of the particulars converts the universal into a simple predicate and risks confusion with the notion of the inherence of a quality in its substance, a very different relation, the discussion of which belongs to the head of substance. For the proposition 'this is yellow or sweet' has an entirely different meaning from the proposition 'this is a dog' or 'this is a yellow or a sweet.' Taken in extension this last proposition means that this is one of a class, but that class is itself defined and designated (denoted) by its constitutive universal. Taken in intension the predicate here is not a quality at all but a plan of construction. The universal is never therefore something which we assert of its particulars or which merely obtains of its particulars, and the universal does not depend on the predication but the predication on the universal.

On the other hand to call the universal an independent reality appears to give it a unique position from which as it were it should descend upon its particulars and inform them with its spirit. It seems to transfer universals into a neutral world, whereas their stuff is the same as the stuff of their particulars. The same objection applies to

the notion that the universal is the limit towards which the particulars are a progression. For the limit of a series is never itself a member of that series but outside it.<sup>1</sup> Thus the series, 1,  $1 + \frac{1}{2}$ ,  $1 + \frac{1}{2} + \frac{1}{4}$ , etc. approaches to 2 as its limit, but 2 is not a member of the series. It is true that the limit of a series is of the same order as the series, the limit of a series of numbers is itself a number, and this is what makes the conception of universals as limits enlightening. But the limit is constitutive of the series only to the afterthought which recognises that the series has the limit. What corresponds in the series to the universal is the law of its formation and this is not outside but 'within' the series, though it is not of course a particular member of the series.

The universal exists therefore only so far as it is realised in its particulars and it has such reality as, to use a phrase of Mr. Bosanquet, is possible to it. It may be said to have that reality of existence which is called subsistence. For it is free from limitation to one particular space and time. But subsistence must not be understood to imply a neutral being which is distinct from the world of spatio-temporal existence. The universal subsists in so far as its particulars exist and is spatio-temporal though not particular. The universal is nowhere and nowhen in particular but anywhere and anywhen, and in Hume's language is in readiness to start into being (which is existence) when the occasion calls. It is not timeless or eternal as being out of time, but as being free from limitation to a particular time.

Moreover not only does the universal exist in this qualified sense which is called subsistence, but we must add, extreme as the statement may sound, the universals are spatio-temporal, physical, biological, mental, according to the level of existence to which their individuals belong. Universals are not necessarily like triangle or square merely spatio-temporal. When we reach rocks or plants or minds, we have plans or habits of Space-Time which include plans to which various qualities are correlated and which are a plan of the combination of such plans. In this sense we must

<sup>1</sup> Cp. T. P. Nunn, *The Teaching of Algebra*, London, 1914, p. 542.

say, though the full meaning cannot be developed at present, that universals of physical things are physical, and that the universal man though it is not a man is man or human. A physical universal is a physical subsistent and a mental one a mental subsistent. This does not interfere with their being ultimately all alike spatio-temporal, for all things no matter what their qualities are bits of Space-Time.

In order to realise more clearly the meaning of the subsistence of universals we may first revert to mental dispositions. Such a disposition is either experienced consciously in imageless thought (by what may be called a diagrammatic process of mind) or else we can conceive it as a neural (psychophysical) disposition, or physical tilt of cells. Now our habits as we saw are localised. But there is nothing lower than Space-Time in which to locate a disposition of it. What then is this disposition? It is certainly not something which we who think can say, *après coup*, about Space and Time, merely because upon occasion we have particulars of a certain kind which we put into classes. On the contrary, only because of the universal and at its guidance can we arrange in a class. It is itself something spatio-temporal. Nor is it a bare potentiality. When a part of Space-Time is not occupied by a real dog, it is occupied by something else, if not by something material, then by Space-Time. For Space-Time is always full; there are no vacua in that matrix of things. It differs only at one moment and another (and the difference may be enormous) by the different configuration of its motions. Thus there may be no dog or chalk triangle at this moment here in the space before me—those are not the lines of advance within that space—yet when the occasion comes the dog may be there, because the actual grouping of movements has been replaced by that grouping of movements, with their correlative qualities, which is a dog. Provided of course the empirical circumstances do not impede; for no dog can replace a stone wall which is not removed. To take a more obvious instance, which is suggested to me by an interruption to my writing, a volume of space-

time filled by wind may be displaced by that highly complex grouping of qualities, my body, as I walk. We may make the matter easier for imagination by saying that any space contains actually all geometrical patterns as soon as the time comes to draw them.

Such instances do nothing more than illustrate the feature of Space-Time that within any part of it the distribution of point-instants may take any plan permitted or required by the empirical conditions. It is only in this sense that the plan of a universal is potential; its potentiality is a reality consisting in the readiness of Space-Time to adopt it, because Space-Time is built up of point-instants whose place and time are perpetually changing their distribution. This is the general potentiality of Space-Time. Its specific potentiality, as when an acorn is said to be potentially an oak, is describable in more specific real terms. But all potentiality is real though it is not an existence in particular. And in fact can anything be more real, a more concrete (though elementary and not specific) determination than the constancy to which all universality has been traced? From the point of view of this question, perhaps our labour to give a more definite meaning to subsistence is labour lost.

Universals then though they have not existence in particular have subsistence in so far as Space-Time suffers or allows existence according to the plan of the universal. They are the formulae according to which Time brings forth particulars in a Space which can receive this plan. Time is not therefore the moving image of eternity as Plato or Timaeus said, holding the forms to be eternal. The forms are not imposed on Space. But the Time which is the life of Space brings to birth particulars in their image.

Universals are not more real than their particulars but have greater significance, as the general equation to a circle is of greater significance than the same equation with a numerical magnitude assigned to its radius. They are concrete in the sense that they are not abstract general ideas such as Berkeley directed his invective upon. They are the constitutive plans of things. They

are spatio-temporal and have all the concrete reality of Space-Time. For the matrix and its determinations are as concrete as the crystals deposited from it.

It has been thought that extramental universals, owing nothing to thought save that they are compresent with thinking and owe to thinking that they are known or thought of, must be lifeless—'petrified' is the word used.<sup>1</sup> Nothing can be farther from the truth. Universals do not move or act; it is their particulars which do this. But they are the plans of motion and action, to which all action conforms. Like the cockles and mussels of the fishergirl's song they are "alive, alive, O!" But they do not owe their life to mind. On the contrary, the life which universals possess in mind is but an example of the spatio-temporal vitality of all universals. Mental universals are mental habits, and it is in virtue of the dispositional character which they realise that particular mental acts work their effects. The best known instance of this is found in ordinary association of ideas. One particular idea having been united with a second in an interesting experience, another idea which is like the first calls up an idea like the second. For an idea is never repeated identically. What is repeated is its disposition. The new idea which sets this disposition going, set in action the connected disposition which is actualised in a particular. The original experience was  $a_1b_1$ . The new experience is  $a_2b_2$ . The two  $a$ 's are particulars of the mental habit A, the two  $b$ 's of the habit B. The variation of  $b$  produced by experiencing  $a_2$  rather than  $a_1$ , leads to the reinstatement of B in the form  $b_2$  rather than  $b_1$ , by the operation of what Mr. Stout calls relative suggestion, which is in fact an instance of the organic character of mind. All this has now become the common possession of psychologists. Nothing in it except what is biological is peculiar to mind, and what is biological is shared by mind with life. The plants also exhibit the working of relative suggestion in adapting themselves

<sup>1</sup> Mr. Bosanquet's *Distinction of Mind from its Objects*, p. 36, Manchester, 1913.

within settled lines to changing circumstances. In the end the character of all action physical or mental depends on universals, and in the end all universals, mental as well as physical, are spatio-temporal habits, though they are patterns of other qualities as well.

It is in fact the cardinal defect of universals as conceived by Plato or the Pythagoreans that they were changeless and immoveable and eternal. For not even the mind of Plato could be free from the habits of his age, one of whose tendencies was to seek the highest ideals of perfection in gravity of action and statuesque repose rather than in restless motion.<sup>1</sup> Hence to account for motion he had to look for another source which he found in soul. It is claiming no great credit that for us universals should have from the beginning the form of motion,<sup>2</sup> should be not merely spatial but spatio-temporal. They are not particular motions but the plans of motion and they are actualised in particular motions. As the empirical universals vary from bare geometrical patterns to the universals of material and living and thinking things they become plans of motions which are correlated with qualities. They are plans of configuration of qualities or configurations of matter or mental action. But they are never dead or petrified, because in the end they are spatio-temporal plans and instinct with Time. And above all they are never bare potentialities, the creatures of abstract thinking, but possess such actuality as they can possess, which is not particular actuality or

<sup>1</sup> In a very interesting conversation, reported by M. Paul Gzell (*Art*, by Auguste Rodin, translated from the French by Mrs. Romilly Fedden, London, 1912), Rodin points out how the Greek statues, e.g. the Venus of Milo, or the Tanagra statuettes, secured the impression of repose by the opposite inclinations of the lines of the shoulders and the hips, so as to produce a balance of the body. Whereas in later art, as in the David of Michael Angelo, the lines are in the same direction, and the result is the impression of motion.

<sup>2</sup> I can accept with equanimity the laughing charge of Aristophanes against one of the sophists of his time that "Vortex has expelled Zeus and reigns in his place." Empirical things are vortices or eddies in the stuff of Space-Time, and universals are the laws of their construction. But I hope to show in the end how Vortex reintroduces Zeus in a more considered and worthier guise and to a securer throne.

existence. The laws of the construction of things and those of the relations of things to one another are not therefore inventions of the mind imputed to nature, but part and parcel of the constitution of nature, and far more important parts than the particular facts from which they are supposed to be merely derived by our human thought, as if thought could make anything real which it does not find.<sup>1</sup>

Whatever difficulty there may be in conceiving the nature of a universal and its relation to its particulars,

Universals  
and repeti-  
tion.

<sup>1</sup> I have made no attempt in the above to consider the bearing of the result on the teaching of Plato and the Pythagoreans; partly because it would be a matter of great length but mostly because I have not the required scholarship. I imagine that it is more in keeping with Pythagoreanism than with Plato himself. On the other hand, in describing universals as patterns of motion I do not go the length of one of the later Pythagoreans, Eurytus, of whom Mr. Burnet tells us that he represented the form of man (supposed identical with the number 250) by sticking pebbles to that number into wet plaster along the outlines of a human shape. This makes the form of man not merely a pattern of matter but actually a material thing. But exaggerated as the procedure is, the spirit of it is sound, and I delight in Eurytus. The Platonic doctrine of forms as numbers, that they are composed of limit and the unlimited or indeterminate dyad, represents within the world of forms what I am trying to say without any division of form from sensible things, allowance always being made for the absence of Time from Plato's conception of numbers or forms. But the separation of forms from sense which is common to Plato and the Pythagoreans disappears, as remarked above, when sensibles are regarded as spatio-temporal complexes. I have thought it best to use Plato for my purposes as a guide to my own inquiry without nice discussion of him for his own sake. For the same reason I do not enter into the question of how much in the above is in agreement with Aristotle's teaching when he is constructive and not merely critical of Plato. For Plato (with qualifications) as for him the forms were constructive laws. His doctrine that the species is the genus in energy or actualised appears to me of the greatest significance. On the other hand, what he adds to Plato in the matter is not very satisfying and certainly does not bridge the gap between sense and thought. For the actualisation of the species demands a prior individual of the same species: "man begets man." But Aristotle though an evolutionist was necessarily only a logical and not a biological evolutionist—like Hegel after him. The whole controversy as to whether forms are beside particulars or in them loses its importance, as I have observed before, when both form and particulars are spatio-temporal.



one thing can at least be affirmed, that without repetition or the possibility of it there would be no universality. The idea of a plan contains two features which must be distinguished. A plan is a complex of parts, and accordingly all universals imply such complexity, except in the limiting case of bare existence or point-instants where there is simplicity; though even here an instant is intrinsically (not merely empirically or as a matter of fact) repeated in space and a point in time; point-instants being the bare conceptual elements of Space-Time. A plan or universal involves, outside this case, relations of parts, or when it is a 'law of nature' it involves relations of things to one another. The relation within such plan or law is preserved under all instances, though with indefinite scope for variation so long as the relation is preserved. What these limits are is a purely empirical matter. There is no categorical reason why there should not be human beings two miles high. The reason is found in the empirical conditions, the difficulty of obtaining food enough, the extreme difference in the temperature of the atmosphere at the head and the feet, and the like. The experiment has been tried on a modest scale with mammoths and dinosaurs and has failed.

But the internal complexity or systematic character of a plan is not its universality; and because of the ambiguity of the word plan, law, which means universality, is preferable. To a universal, whether the law of construction of a thing or of relation to other things, repetition or the possibility of it is vital. A generic universal may as a matter of fact never be repeated empirically. There may be only one instance of the generic universal 'a Napoleon.' But as a universal and not merely a plan it implies repetition. The singular universal, *e.g.* Napoleon, is repeated in its moments of actual existence. Apart from possible repetition a plan would be only the plan of a particular, and would be in fact not a plan or law but an actual particular, not even an individual. This is in fact only to say again that a universal is a habit.

Why certain universals should occur only once and others repeated in varying numbers, why there should be actual repetition of complexes of events, is for the moment greatly dark. It again concerns the empirical order of things, of which we know so little and of which philosophers can say even less. There are multitudes of atoms of gold, and multitudes of electrons from which a selection is made to constitute atoms, and many trees and dogs. The inorganic world spawns, like fishes in the organic world. The universe in its lower levels behaves apparently (does it do so really?) as if endowed with life. Knowledge of this kind we have, but what more have we? We accept repetition of things in their kinds as an empirical fact. To do so presents, it must be confessed, a problem of the gravest difficulty, which is only mitigated and not removed by the consideration that the multiplicity of individuals of one type, or that of types which fall under higher types, is not bare repetition, that the many specimens differ from one another however slightly, that even an atom is only a statistical conception, the conception of an average of individuals all varying about a mean. The fact of multiplicity remains. Supposing it to be true that no reason can be found in the nature of Space-Time itself why types should repeat themselves in many instances, we should have succeeded in overcoming the difficulty of how universals can be realised in particulars, only to be left with the problem, apparently insoluble, of how there come to be particulars at all. Later we shall see that quality is the distinctive empirical element in things, as contrasted with their *a priori* or categorial characters and with the relations of empirical things which arise from their being complexes of Space-Time. It may be that we must regard the multiplicity of nature in instances as something equally empirical. It may be that the problem though not now soluble, and I cannot see at present the solution of it, may ultimately admit solution, as I hope. I shall return to the matter at a later stage.<sup>1</sup> At present we must insist that if there were no universals which as

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plicity.

<sup>1</sup> Bk. III. ch. ix. F, 'On values in general.'

a matter of fact were repeated in their instances, we should not have reached the conception of universals. And more than that, if there were not the categorial possibility (that is the *a priori* possibility) of empirical repetition, not only would universality not be known (which after all concerns only human beings) but there would be no universality.

The distrust of repetition.

Several reasons exist which account for the tendency on the part of certain writers to push too far their reaction against the teaching of sheer empiricism which, not being empirical enough, disallows the reality of the non-empirical. They neglect the claims of repetition to be regarded as vital to universality and to be distinguished from the systematic nature of a universal. One reason is the fear of bare repetition, of instances which are not variations of a plan, but manufactured articles which exactly reproduce each other. If such repetition existed the use of instances would lie merely in their number. But as Mr. Bosanquet has so impressively taught us, the value of instances is that by their differences of character, not by their number, we are able to control one case by another and render precise the fundamental law which is involved and which may be masked by irrelevant circumstances or counteracted by others, "to purify" the law "by exceptions and finally limit it by negations."<sup>1</sup> When a single instance is of the right character it may be sufficient to establish a law; and the business of the logician is to define that rightness of character. On the other hand, mere number of instances which we roughly call the same is only useful when analysis is impotent, and it can serve us because we can reason backwards from the relations between the number of various groups of instances to the probable character of the causes which are at work.

Now our conception of repetition renders this fear groundless; it means that repetition brings not exact identity but modifications within limits of an identical plan of construction. The more comprehensive is the plan, the greater the room left for variations which may

<sup>1</sup> *Logic*, vol. ii. ch. iv. p. 117, eds. i. and ii.

themselves be specific variations of kind. Bare repetition it may be affirmed does not even exist. Manufactured articles are not identical though they may be identical within certain limits of precision. It is, however, true that the more closely instances reproduce each other the less useful they are for scientific discovery. But the mere difference of place and time which makes an instance numerically distinct may supply empirical conditions sufficient to lead to variation utilisable for scientific method.

A second reason is the fear lest laws or universals should be mistaken for the abstract generalities or generalisations which Berkeley demolished, which are derived or are supposed to be derived from their particulars by a process of omission. The specific features of individuals which give to things their ordered variety and richness of colouring are omitted; their common features are retained, and it is the business of thought to discover and arrange these generalities. Such abstractions are often spoken of, by those who justly repudiate them, as 'class-concepts.' Correspondingly, laws of nature have sometimes been conceived as abstractions of the common elements in the relations of things to the neglect of the variations of those relations. Now it is evident enough that useful as such abstractions may be and are for artificial or provisional purposes, they have nothing in common with universals as plans or laws of construction, for these so far from neglecting the wealth and variety of their particular instances are the formulae which hold the instances together, not merely in our thinking but in fact. But I cannot see from such acquaintance as I possess with science that these abstractions represent its practice. A class in the actual practice of the sciences is not a bare collection of particulars which happen to agree in certain important respects, but a group determined by their constitutive formula. Witness the displacement in biology of the artificial by the natural system of classification. Even the artificial system was inspired by a true scientific instinct, for all its faults. For the sexual parts on which

the classification is founded are of the last importance in organic life, and supply a clue to, or in Mill's phrase are an index of, a vast number of other important properties. The constant effort of the physicist or chemist is to discover characters which are index characters to the real constitution of things. The atomic weights were a first approximation to this end. At present we are witnessing the attempt to resolve the atom into a planetary system of electrons in motion round their central nucleus. Where would it be possible to find a more flagrant example of the real striving of physical science after constitutive plans? It is true that so eminent a logician as Jevons has represented scientific procedure as founded on the ideal of perfect enumeration of instances. But it is hardly just that the sciences should be saddled with the errors of their interpreters. The most elementary acquaintance with simple mathematics is enough to show in them the same endeavour after systematising their facts that is verifiable in the less 'abstract' sciences. The idea that mathematical propositions are mere generalisations could only be entertained by the misunderstanding of empirical method to which Mill fell a victim. He attempted to set geometry on the level of the inductive sciences by regarding geometry and arithmetic as concerned not with Space and Time themselves but with the physical things which occupy them. Geometry is indeed an empirical and experimental science; but its empirical subject-matter is not the things which fill Space, but their spaces. It observes the behaviour of Space, and the variety of its empirical material supplied by complexes within Space are the figures whose properties it discovers and connects into a system. It is thus not the sciences themselves which in their spirit and purpose worship the idol of abstract generalities. A spectre has been conjured up by the fears of philosophers which is called the mechanical method of science. But so far as I can see, it is the offspring of mistaken philosophers, or of science playing the part, as it often rightly does, of a spectator of its own procedure, but failing to do it justice.

A profounder reason for the distrust of universals, described as laws which are repeated in particular instances, is connected with the previous one. They seem to some to remove us from reality, whereas the aim of all thought and science is to preserve the most intimate contact with reality, and with reality in its sensible form. Such an aim is more surely, say they, embodied in a work of art where every part of the work is vivified by its meaning, which as it were penetrates into every corner of the statue or the picture or the poem. Laws are infected with the repetitive disease; and the infection is conveyed by Space and Time, which are for these thinkers the beau-ideal of endlessness without purpose, the splintering of things into dissipated elements without the stability of real existence. The duty of thought is to be organic, and even if there is something which can never be reduced to terms of thought, if a person for instance can never be exhausted in his personality by any organisation of predicates, yet thought aspires to be individual and in its own sphere to mirror reality so far as thought can. All thinking tends thus to the concrete, defining itself into complex individuality. The 'mechanical principle' neglects this purpose and misses the true concreteness of thought.

It is such reasons which have led to the doctrine of the 'concrete universal,' a doctrine derived from Hegel and nowhere expounded with more effect and enthusiasm than by Mr. Bosanquet in the second chapter of his *Principle of Individuality and Value*. For our hypothesis on which things are ultimately complexes of space-time, it seemed that thoughts, whose object is the plans of such configurations, never can be divorced from their particulars; that Space and Time, so far from being the least self-subsistent of things, are in truth in their indissoluble union the ultimate reality in its simplest and barest terms; that the plans which it admitted are therefore concrete. But they do not aspire to be 'concrete universals' in distinction from the alleged abstract ones which do not and cannot exist. The so-called 'concrete universal' is in fact not a universal but a universe. It is

not a law but a system. The relation of the universal to its particulars ceases to be that of a plan to its participants, but becomes that of a society to its members or a world to its parts. "The true embodiment of the logical universal," says Mr. Bosanquet, "takes the form of a world whose members are worlds." "The universal in the form of a world refers to diversity of content within every member as the universal in the form of a class neglects it." (The universal we have described has neither the form of a world nor of a so-called class, but of a plan or law.) In the end there can be but one true universal, and that is the world itself as a single individual. Hence the significance of the phrase "a world whose members are worlds." "The test of universality which it (the concrete universal) imposes is not the number of subjects" (granted at once!) "which share a common predicate, but rather than this, the number of predicates that can be attached to a single subject" (for instance, the name of a person).<sup>1</sup>

The recognition of this logical form as the true type of universality, Mr. Bosanquet says, "is the key to all sound philosophy." With all respect to the writer who defends it with such skill, I venture to think this doctrine combines into one two distinct notions. One is that of the union of different features into a plan or law which is realised with modifications in individual instances, the combination of many predicates which appears to be intended in the passage I have quoted. This is the universal as I have described it. But such a plan cannot be called a universe. The other notion is that of the union into a system of different individuals in or by or under such a plan. Such a union is indeed a universe, but its relation to its particulars is not that of an individual to its predicates, nor that of a plan to its embodiments. A universe of particulars is not the universal of them. It introduces in fact a different and important conception which it misnames universal, that of an individual substance or the totality of changing phases of an individual's life, every one of which follows a certain plan

<sup>1</sup> *Loc. cit.* pp. 37-40.

or universal. I find in the doctrine of the concrete universal these two notions intermixed.<sup>1</sup>

The distinction may be illustrated first from the case of an individual person, which is regarded as typical. Any fact as we have seen is universal in so far as it follows a plan of constitution and can be repeated according to that plan in time and space. As a particular determined according to a plan it is an individual. An individual substance or thing (to anticipate what belongs to a later chapter) is the continuum of these repeated instances of its universal plan. In a personality the various acts of the individual are highly organised, and in the phases of his life distinct activities become prominent, but always in subordination to the one plan. Thus when an individual follows the well-known rule of Sir William Jones :

Six hours to law, to soothing slumbers seven,  
Ten to the world allot, and all to Heaven ;

dedication to Heaven describes the universal plan, the individual person is the continuum of different conditions of life which follow this plan. The theory of the concrete universal would make him the universal of his acts as well as the universe of them.

This case is that of an organised individual, and is of great complexity. A simpler case is that of a parabola whose equation is  $y^2 = 4ax$ , where  $a$  has some definite value. This individual parabola is the thing or substance composed of all the points which follow the plan so described, and is the universe of them. But their universal is not the parabola but what may be described by the phrase 'any point which satisfies this equation.' The parabola is not a universal. On the other hand, there is a universal parabola which is the plan of all such totalities of points, a plan symbolised by the same equation when the parameter  $a$  may vary from curve to curve. This universal parabola is not, however, the universe of all parabolas, and in fact there is no such individual or universe.

<sup>1</sup> Thus Mr. Bosanquet himself, as before noted, compares a universal in the mind to a habit, and so far I seem to be repeating his view of the universal. But a habit is surely not related to its realisations as a thing to its predicates.



This is still plainer when we pass to a species or genus, which can only be called the universal of its specimens as being their plan of construction. If it means their universe, where is such an individual whole to be found? There is only the collection of individuals, which have not even that approach to organisation that can be found in a parabola. It may indeed happen that instances of a species (or, if we prefer to say so, species of a genus) are connected together into an organic whole which is more than a mere whole of parts. This is the case as I believe with human societies; and wherever beings tend to communal life there is an approach to this state of things. The members of a society are instances of a type which is represented by the society as a whole, and the society is in fact a species which is itself an individual existence.<sup>1</sup> But we are not entitled on the strength of such special (and perhaps disputable cases) to identify a universal with an organised individual because the plan of the individual members happens in these cases to be in some way embodied in the whole. We still need the notion of a plan or law, and this is what commonly is called a universal.

In avoiding abstract universals, which not true science uses but a false logic of science imagines, the theory we are commenting upon assigns the name of universal to something which is not a universal in the traditional sense, but something different which is yet blended with the older meaning of universal. If the matter were one of nomenclature alone, it would not signify so much. Its importance lies in the metaphysical consequences. If universals (on the discovery of which all science turns) are really universes, and not merely laws, there is in the end only one universe or individual which is self-existent; the minor universes are shadows. For if the universal is related to its particulars as a thing to its predicates they become "adjectival" to it, and in the end the minor universes are adjectival to the one universe or absolute individual. If on the other hand the reality is Space-

<sup>1</sup> H. Spencer has, I believe, a remark somewhere to this effect, where I cannot remember.

Time, individual things, and minor universes which are groupings of them, are real with the reality of their parent, which is then "the nurse and mother of all becoming," not the devouring maw which swallows all empirical things.

The 'concrete universal' then mistakes universality for system. It remains to add that the idea of system or organisation is of the highest value for understanding the problem of knowledge, and it is by this clue that Mr. Bosanquet himself has been able to render such service to logical theory. Organisation is a great empirical fact. It begins lower down than organic life and is perpetually overcoming the repetitive tendency which is equally empirical. As we ascend the scale of being in the order of time, aggregates are replaced by organic systems; and the higher a thing is in the scale, the greater it seems is its ordered complexity. But system in general exists in every complex even in the least organised, all disorder has its own complex plan. System is the coherence of elements, and the notion of system represents the essential continuity of Space-Time which it retains while it breaks up into its parts. The parts remain within the whole and are coherent with one another. Science investigates the particular forms of such coherence, and organisms are a highly-developed instance of it. The nature of an organism and still more a work of art is rightly exemplary in the methods which reason follows. Thought, in following the clue of coherence amongst its data, as science always does, is thus bringing back the scattered members of the universe into the spatio-temporal continuity out of which, in spite of their disguises of qualities higher than mere motion, they ultimately sprang. These considerations belong properly to the theory of truth, and the methods by which it is attained in science. Those methods are empirical rules by which we seek to bring order into the empirical material; and it may be surmised even at this stage that logic is an empirical science which deals with the interconnection of the isolated portions of our knowledge (that is, of reality) as presented in propositional form.<sup>1</sup>

<sup>1</sup> For this topic see later, Bk. III. ch. ix. B, 'Truth and Error.'

## CHAPTER IV

### RELATION

The  
category.

ALL existents are in relation because events or groups of them are connected within Space-Time. Relation amongst existents follows from the continuity of Space-Time. The continuity of Space-Time is something primordial and given in experience. When it is described in conceptual terms as the continuous relation of point-instants it is described in terms derived from finite complexes or things, just in the same way as we apply the conception of causality in physical events to mental events though we are familiar with the causal experience first in mental life. Thus there is no circularity, to anticipate the old misapprehension, in explaining relation by continuity of Space-Time. It is a certain determination of Space-Time, afterwards known as its continuity, in virtue of which existents are related to one another. Not all relations of existents are in their immediate character or quality spatio-temporal; but if our hypothesis is sound they are always spatio-temporal in their simplest expression. Relation is, as James has so constantly and rightly insisted, as elementary a feature of the universe as 'substantive' things. This is true not only of our mental states, where it is apprehended in enjoyment, but of the external world, where it is apprehended in contemplation. In the end it depends upon and expresses the continuity of Space-Time. Space and Time we have seen are not relations but they are through and through relational. Neither are they mere existence, but they contain all existence. They are the stuff in which existences are related; and the terms and the relations between them are equally spatio-temporal.

Hence it is that relation is as vague a word in philosophy as being. It stands for any connection between things. Specific or empirical relations can be described, mostly by naming their terms. But relation itself, relation as such, is rarely defined or identified. The reason is apparent now. It is a category and can only be indicated by the finger as a characteristic of Space-Time or described by conceptual terms which are later in the order of reality than itself, just as we may describe red as the colour of blood.

What then are empirical relations? We have seen that empirical relations of space and time are themselves spaces and times or are homogeneous with their terms, made of the same stuff. Following a distinction drawn by Mr. C. A. Strong, James classes them as "ambulatory" relations in distinction from "saltatory" ones.<sup>1</sup> For example, "difference is saltatory, jumping as it were immediately from one term to another, but distance in time or space is made out of intervening parts of experience through which we ambulate in succession." James goes on to describe the knowing relation as ambulatory, because in it we ambulate from idea to percept or thing, which is of the same stuff as idea, and we ambulate though a medium of the same stuff. With that we are not here concerned. However, the distinction of the two kinds of relation, happy and useful as it is, is not of more than secondary importance. Whether a relation is of the same stuff as the terms or not, it makes the terms into a connected whole, an integral situation. From this point of view all relations are ambulatory. Moreover, on our hypothesis it is clear that in the end all relation is reducible to spatio-temporal terms. Even apart from this ultimate reduction there can be no jump from term to term, for the relation, if it is to be concrete and not a mere thought about its terms, must be some specific bond between its

Empirical  
relations.

<sup>1</sup> W. James, *The Meaning of Truth*, New York, 1909. 'A word more about Truth,' p. 138. For the whole subject of relation see his Appendix A on 'The thing and its relations' in *A Pluralistic Universe*, New York, 1909.

terms which binds them into one continuous tissue. If it falls short of this, the relation fails to relate. Whether the relation is homogeneous with its terms or not is therefore a secondary matter.

Conceived in this concrete fashion a relation may be described as the whole situation into which its terms enter, in virtue of that relation. The qualification, 'in virtue of that relation,' is added because terms may have other characters which do not concern the relation in question. Thus a king may, like Saul, be taller than his subjects. But the relation of height does not concern the kingly situation but a different one; or a mother may be more beautiful than her daughters, but this does not concern the maternal relation, but a relation of degree. The situation may be one of successive events as in the causal relation of the blow which fells an ox; or of simultaneous things like the rivalry of two suitors. By the 'situation' is meant the concrete system of circumstances which brings the terms into connection with one another. It used to be said that a relation was based on a *fundamentum relationis*, and the distinction of the relation and its foundation is, as I suppose, merely that the relation itself is the concrete connection between the terms set up by the acts and events or circumstances which constitute the *fundamentum*. Mill has admirably described this *fundamentum* in his *Logic*,<sup>1</sup> though the reader must always discount Mill's metaphysical prepossessions. Take the relation of interval between two points or two moments. The interval is the connecting situation of the two terms, in the one case a line, in the other a duration; that interval is the transaction into which two points or instants enter in virtue of their real nature as point-instants. The points or moments themselves do not belong to the connecting situation except as they are the beginnings of that transaction. (It is a subtlety to be mentioned hereafter that the interval, as the stretch of points between two positions, is not the same relation as

<sup>1</sup> *Logic*, Bk. III. ch. ii. sec. 7, and particularly ch. iii. sec. 10. I mean by Mill's prepossessions his leaning (1) to subjective idealism in metaphysics, and along with that (2) to atomism in psychology.

the interval which is the distance between them.<sup>1</sup>) The relation of maternity consists in like manner in the history of bearing the child and the whole set of actions and feelings in which the mother is engaged towards her child and correspondingly ('correlatively') the child is engaged towards its mother; always with the proviso in so far as these actions and feelings on one side or the other establish a connection between the two partners, or initiate a transaction between them. For the actions and feelings are *prima facie* states of the mother or of the child, some of them actions, some passions; services on one part, acceptance on the other of those services. The relation is the situation or connection or transaction set up between the two partners in virtue of these services and acceptances. Similarly the relation of knowing, the cognitive relation, is not the act of knowing or the existence of the object but the situation of connection between the two. To take a further example, the relation of king to subjects is the system of acts and capacities of them or passions and capacities of them in which the king as king is concerned with his subjects, in so far as these set up a certain situation or transaction between the two sides.

These examples illustrate the truth that, not merely in

<sup>1</sup> The distance between two points as distinguished from the stretch of points between them is their unlikeness in respect of position. [Cf. the distinction drawn by A. Meinong between 'difference or interval' (*Unterschied*) and 'unlikeness' (*Verschiedenheit*), used below in respect of intensity, in ch. vii. (*Über die Bedeutung des Weberschen Gesetzes*. Hamburg, Leipzig, 1896).] The points are identical as points but different in position. Now such unlikeness in position is the situation constituted by the interval, but that interval taken not as divisible into points but as the occupation of a space to a certain extent taken as a whole. It is a matter of subsequent experience that degrees of spatial unlikeness are themselves expressible by extensive measurement, so that one distance may be two feet and another three feet. Consequently, though distance of two points is as a matter of fact the spatial interval of the two points and can be resolved into parts and measured, it does not follow that any distance, as between the intensities of a quality, e.g. the sound C, or between qualitative units themselves like pitches of sound, is necessarily extensive, that is, is an extensive quantity. See later, ch. vii. on intensive quantity, pp. 307 ff.

bare Space or Time but in the empirical relations that subsist between things with qualities, the relation is just as concrete and just as much a reality (being ultimately spatio-temporal) as the terms and belongs to the same tissue with them. This is what James in the *Psychology* affirmed of spatial and temporal relations. The relation may in fact be on occasion the centre of importance and the terms, as it were, adjectival of it, instead of its being adjectival of them. The fringe may be central and the centre a fringe. Illustrations were given in a previous passage, and fresh ones may be added here. The two ends of a line may be merely its ends, the line itself, the relation between them, being central, or they may be thought of as the limits which bound the line, and, as it were, press it in—in which case the points are central. This difference of emphasis has been used by Th. Lipps to explain various illusions to which we are subject in the estimation of the interval between two points.<sup>1</sup> Again, in a Homeric battle, it is the personality of the champions which is central, the engagement is a fringe. But in a battle of the great war, what we thought of first was the swaying backwards and forwards, the advance and retreat of the combatants, while the combatants themselves were dim and confused masses.

Sense of  
relations.

Every relation is a situation or more properly a transaction between its terms. If the terms are transposed they enter into a new relation which is of the same kind as before but differs from it in 'sense' or direction. Thus if A is the mother of B, B is a child born of A. Two such relations differing only in sense are said to be the one the converse of the other. This result might seem at first sight to be incompatible with the account we have given of relation. Since the situation of mother and child involves both parties, it would seem that the

<sup>1</sup> Th. Lipps: *Raumästhetik und geometrisch-optische Täuschungen*. (Schriften d. Ges. f. psych. Forschung (II. Leipzig, 1893-7, Section 3). Thus the empty horizontal distance between two points looks shorter than a horizontal line of the same length, because the points in the first case are more independent and seem to shut in their space interval.

maternal and the filial relation are not different but the same. And so they are if the terms are merely interchanged and the terms themselves remain the same. There is no difference in the situation or relation if the terms are singular. The propositions, A is the mother of B, and (the same) B is a child born of A, describe precisely the same fact, but they describe it in the light of the general relations of maternity or filial relation. Now these two general relations differ in sense, and the situations though the same in kind are different situations. There is a real difference between the propositions A is the mother of B and A is the child born of B. Actions in the first case are replaced by passions in the second and *vice versa*. The difference lies in the direction of the connecting movements. Similarly as between A precedes B and A succeeds B. The quality of the situation is the same but its direction is reversed. The journey from Edinburgh to London is not the same journey as that from London to Edinburgh, though it covers the same interval of space. If A is the mother of B and the child of C there are two sets of transactions which are of the same sort but in a different sense, and the situations are also different. It is only if the situation is treated as a resting one and not a transaction that the real empirical difference in the situation is overlooked. When the same situation is expressed in two different senses by interchanging the terms (Edinburgh is north of London, London is south of Edinburgh), the difference is not indeed a merely verbal one, though perilously near to it, but a difference of aspect or description, what Aristotle expressed by saying that the two things *are* the same but not in their *being*.<sup>1</sup> The same actual situation is interpreted differently according to the plan of the general converse relation by interchanging the terms.

The above is what is meant by saying that a difference of sense depends on the order of the terms.<sup>2</sup> It affords

<sup>1</sup> Ἔστι μὲν τὸ αὐτό, τὸ δὲ εἶναι οὐ τὸ αὐτό. Aristotle's example is the road from Peiraeus to Athens.

<sup>2</sup> In so-called logical conversion there is no difference of 'sense' involved. There the relation or "pseudo-relation" as Mr. Russell



also another testimony to the truth that we do not have terms and relations but terms in relation. When terms are transposed the general relation alters with them in direction. Two conclusions follow. First, the difference of sense is not something of which no account can be given. If it cannot be defined, it can be described by indicating what it stands for, the real difference of spatio-temporal direction, that is of direction of motion, to which it corresponds; just in the same way as relation itself is indicated by pointing to its crude primordial basis in Space-Time. Transactions are temporal as well as spatial and are motions with direction. Secondly, we are confirmed in the belief, hinted in a previous chapter, that order arises out of the spatio-temporal character of things, is founded upon Space-Time itself, and is not prior to Space and Time, except when legitimately so considered for artificial purposes.

Relation  
and other  
categories.

Primarily relations hold between individual things. But universals have a quasi-individual existence and we may with propriety speak of relations in which universals are concerned. The relation is, however, only indirect and through the particulars. Universality communicates with relation in the strict sense, in that the universal establishes a relation of identity between the particulars. It is doubtful whether we should admit relation between a universal and its particulars; we can only do so, I think, by a substantiation of the universal. The relation between a universal and its particulars is more strictly one between the particulars themselves in respect of the universal. In the same way a thing or substance may be said to be related to a universal which is an adjective of it, though once again this is really a relation between the universal,

calls it is unaltered. Conversion alters or may alter the quantity of the terms. Here, too, the converse is not a mere verbal change.

I have not referred to the accidental matter that in some relations, symmetrical ones, the converse is the same as the original relation; for example, equality. On the whole subject of the sense of relations see Mr. Russell's *Princ. of Math.* ch. ix. pp. 95, 96. My differences from him will be plain from the text.

e.g. sweet, as particularised in sugar, to the other particularised qualities and to the substantial permanence of sugar—all which matters are to be investigated presently.<sup>1</sup> Thus we may continue on this understanding to speak of the relation of subject to predicate. What is important is that we shall not confuse the relation of subject to predicate in the ordinary categorical proposition which expresses the relation of substance to attribute with relations of space or time or quantity or quality, or the like, which are specifically relational, or express relation as such. No contortions of language, however ingeniously successful, will overcome the difference between an attribute which inheres in its substance and a relation like that of quantity which does not inhere and cannot therefore be regarded as an adjective in the proper sense.

Other categories, then, like universality or existence or quantity or causality, communicate with relation. Existence, e.g., is diverse from other existence; and the like. Relation in its turn communicates with other categories. Thus it exists as being itself a spatio-temporal occupation, what we have called the situation connecting its terms. Again it is either particular or universal: there may be plans of relation as well as individual relations. The relation of paternity or that of difference is universal, though embodied like other universals in particulars. Thus relations as universals are real and the objects of thought; though, in view of the abuse by which this truth is transformed into the proposition that relations are the special object or even product of thought, it is almost more important to insist with James that relations are perceived as well as thought and belong to the same sensible reality as terms. And, above all, universal relations are concrete, and relate terms, and they are not to be floated off from terms as if they could be abstracted from them, a danger not avoided as it seems by certain conceptions of relation.

Relations, it hardly needs to say, are external realities when they are relations of external things, and mental

Relations  
not merely  
mental.

<sup>1</sup> Ch. vi. A, 'Substance.'

ones when they belong to enjoyments or mental things. They are in no sense subjective or the work of the mind. Some relations like likeness and difference, identity, equality, greater or less, or those expressed by the words 'and' or 'but' or 'however,' might seem at first sight to be eminently mental, due to comparison. They have sometimes been referred to the experience of the attention which compares (likeness) or hesitates or is obstructed ('but') or rejects ('not'). Red and green are red and green; but it is we who feel them *different*. We might even think that one magnitude is greater than another because the act of attending has a felt excess in the one case to the other. But it is clear that the theory is circular and that the acts of attention are themselves compared (in enjoyment) in order to feel their likeness or difference or excess. These relations are, in fact, empirical variations of the category relation just as triangles and parabolas are empirical variations of Space, or the various integers or fractions are of the category number, and are felt in mind as well as contemplated outside it. Even 'but' and 'still,' though apprehended by mental acts of obstruction, are objective situations of opposition in the objects they connect. Negation is not mental only but exists in things as well, and is such difference as is asserted in contrary or contradictory propositions.

What then are the objective situations which constitute such relations as these? In the case of empirical relations, relations of a certain quality like paternity which connect things of empirical quality, the answer is plain. Since qualities are, we assume, correlated with spatio-temporal processes, the relations, however otherwise represented summarily or compendiously by their qualities, are in the end spatio-temporal, though it may be of great complexity. They are at least reducible without residue to such relations, which are themselves configurations of space-time. As to relations which arise out of categories themselves, we must leave the other categories for subsequent description. We have only hitherto dealt with existence and universality. All existence involves

the relation of difference from other existence, and this we have seen is the exclusion of other existents from the occupation of its own space-time. The relation of particulars to one another under or by their universal is a more difficult matter. A convenient method is to adopt, like James,<sup>1</sup> a pragmatist criterion. The relation is that one particular may be substituted for the other. Likeness is partially successful and partially unsuccessful capacity of substitution. Such a criterion is not open to us, for it carries the relation back to a device of human thought, whereas the relation is in the things and not to be exhausted by a secondary criterion, which gives rather a symptom than the reality. Our previous inquiry supplies the answer. Things of the same sort are in the first place numerically different and exclude each other in Space-Time. But the transaction of conceptual identity<sup>2</sup> between them is their co-inclusion in the one Space-Time which, in virtue of its constancy, works at different places according to a plan which does not suffer distortion merely in virtue of the difference of place and time.

Likeness or unlikeness is a derivative relation, which is combined of the relation of sameness of kind with that of difference in kind. Two things are like each other only if they are different, and unlike each other only if they are identical. Hence both likeness and unlikeness are partial identity in kind. We may take as examples a white and a purple pansy, a red triangle and a red square, a tall or short man, a loud or a soft C. In all but the first case, the different kinds are empirical differences of categorial characters, extension, quantity, intensity, which are more than merely numerical differences. Space-Time provides us with likeness or difference in so far as two empirical universals overlap, or, in Plato's phrase, communicate with each other. Owing to the constancy of Space-Time it is possible for one configuration to be partially the same as

<sup>1</sup> *Some Problems of Philosophy* (London, 1911), p. 103.

<sup>2</sup> Cf. for the phrase Mr. G. E. Moore's paper on *Identity*, *Proc. Arist. Soc.* N.S. vol. i., 1900-1, pp. 103 ff.

one set of particulars and partially the same as another set.

The attempt has been made to explain identity as an extreme degree of likeness and thus to make 'like' the prior conception. Given a subject of reference A, we may arrange the similars to it in a scale of varying degrees of increasing likeness or decreasing difference. When the difference reaches its minimum or the likeness its maximum we have identity. This view was expounded by James as a psychological thesis and contested by Mr. Bradley.<sup>1</sup> Thus, for instance, we may have sounds of the same pitch but different intensity, where as the distance in the intensity from the standard diminishes the compared sensation becomes identical with the standard.

This would seem, however, metaphysically erroneous, for distance can only mean a greater or less degree of unlikeness in respect of something which remains constant or the same. The scale of unlike or like sensations postulates identity and diversity. Being metaphysically erroneous, the view is also psychologically so; for nothing can be true for one science which is false for another. But James's doctrine admits of a different interpretation. It is true that we apprehend distinctly the shock of unlikeness or distance before we apprehend the underlying identity. And it is the series of diminishing distances ending in zero which forces on our minds the explicit identity of kind. Thus James is explaining how we become aware of identity as such and disentangle it from its concomitants. Still it remains the case psychologically (and not merely metaphysically) that the identity must be in our minds, our minds must be working in the same way and have the same sort of object, in order that we should apprehend likeness or unlikeness.<sup>2</sup> Thus identity is primordial and likeness derivative.

A more difficult question is whether likeness (or unlikeness) is an empirical relation, as I have implied above,

<sup>1</sup> W. James, *Psychology*, vol. i. p. 528 ff. For the controversy by the two writers see *Mind*, N.S. vol. ii. pp. 83, 208, 366, 509.

<sup>2</sup> Compare on this point F. H. Bradley, *Logic* (London, 1883), p. 422.

or is itself a category though a derived one. Though a relation of the most extreme generality, it must be declared to be empirical. There is nothing in Space-Time which requires (though Space-Time admits) the overlapping of empirical universals. It might seem that one kind involved in itself relation to other kinds, in the same way as numerical identity is of itself the exclusion of other point-instants and is therefore different from other numerical identity. But the cases are not parallel. For universality is a relation of identity between its own individuals, but is not as such a relation to other universals. Hence there is no reason in Space-Time itself (no non-empirical reason) why two individuals identical in kind should be also different in kind. Plato himself was careful to distinguish the overlapping of empirical universals from the overlapping of categories as such.

Relations, then, are the spatio-temporal connections of things, these things themselves being also in the end spatio-temporal complexes. Since Space-Time is continuous, the connecting situation which constitutes a relation is but spatio-temporal continuity in another form. The relations and the things they relate are equally elements in the one reality and so far are separate realities. But the business of a relation is to relate, and there is consequently no relation without things it relates, which are then called its terms. On the other hand, there are no things which are unrelated to others, which would imply spatio-temporal discontinuity. They must at least be connected in Space and Time, and it is plain that they must be connected by all the relations which arise out of the categories, seeing that categories are pervasive features of all things. Bearing these considerations in mind we can answer directly certain controversial questions about relations.

Are relations external or internal to their terms? We must answer that everything depends on what is meant by external and internal. If to be external means to have a recognisable existence as much as terms have, relations

Are relations internal or external?

are external. If it means that relations can exist in separation from their terms or things, they do not so exist; for if they did so they would not relate. The habit of describing relations by abstract terms instead of concrete ones, *e.g.* the relation of paternity, is partly responsible for this misapprehension. Substitute the phrase 'the paternal relation,' and remember that a relation is a spatio-temporal fact which may, as in the examples given, itself turn into a thing; and it is seen at once to be untrue that a relation exists somewhere from whence it descends upon its terms like a bed-cover upon the sleepers in a common lodging-house. For instance, the cognitive relation is distinguishable both from the act of knowing and the object known, but if it existed without them it would have nothing to do.

On the other hand, if to be internal means that a relation is a quality of its terms, or belongs to them as a quality does, then a relation is not internal to its terms. Inherence is itself a relation, as between the quality which inheres and the rest of the qualities. But a relation does not inhere in its terms taken singly. On the contrary, inherence we shall see means to be included spatially in a thing; and relation from the nature of the case, as being the situation which unites things, is outside each of them spatially (or rather spatio-temporally). Thus the act of cognition or the cognitive capacity is inherent in the knower, but the cognitive relation to the object is outside that act, is its compresence with the object. Indeed, it is clear that if relation were inherent like a quality in a term, then since the relation implies the correlative term, the correlative would in some sense be internal to the other term. Thus the child would be internal to the father and the object known internal to the knower, as has in fact been sometimes held. No one would, of course, pretend that a relation can be a quality of *both* its terms taken together. We must therefore say that no relation is internal to its terms in this sense of inherence. But if internality of relation means only that it cannot exist without its terms, relations are in this sense internal; that is, if the things between which they exist are really

terms of the relation. For a thing may be outside the relation in other respects. Thus paternity is external to a man before he is a father; but when he is a father he is a term in the paternal relation, which as it relates him to the child is internal in this sense to both. It is a further question and, as we shall see, the only question of real importance whether things can be considered outside certain relations, and which are such relations, as *e.g.* this one of paternity.

Thus neither of the alternatives, relations are external, relations are internal, is true without qualification or in a valuable sense. If we separate the world into terms *and* their relations we are making an abstraction. The things are conceived as if they did nothing to each other (which is impossible in Space-Time) or were unrelated; and the relations as if they did not relate. The world consists of things *in* their relations. Since this is the notion which is most obviously denied by the alleged externality of relations (let us call it the crude externality of relations), we may reject crude externality. It implies an original or crude discontinuity in Space-Time; and, as we have seen, without a primordial or crude continuity of Space-Time we could never understand its constitution out of its parts. In truth we form this notion only because we first dissect the things from the original continuum and then build it up again. We hew our stones from the quarry and then restore the quarry from the stones.

But though the question whether relations are external or internal ceases thus to be of great importance, there are distinctions to be drawn amongst relations themselves; according as they are categorial or empirical, and according as they are intrinsic or extrinsic to their terms; which raise a different question but one connected with the other question. For relations are clearly enough not external to their terms as terms. The idea of their externality only arises because things before they become terms in a relation are not necessarily the same as when they have entered it. Categorial characters and the relations founded on them belong to everything. Anything stands

Intrinsic  
and  
extrinsic  
relations.



in some relation of space and time to other things; it has quantity and is greater or less than something else and the like. Its size may alter but some size it retains. It has attributes and is causally related with other things, though it may change its colour or affect a different substance. Strictly, categorial relations are not altered by entry into a relation, it is only the empirical determinations of them that may be altered.

Empirical characters of things are those which they have from the grouping of Space-Time elements into complexes, and empirical relations are the non-categorial relations of things which they have in virtue of their being parts of Space-Time. But under the designation empirical I include two sets of characters. One set are variations of Space-Time itself or of the categories. For example, triangularity is an empirical determination of shape, for not every finite is triangular. It is what is commonly known as a primary quality. Again 'and' and 'but' are empirical variations of the category of relation, as 'like' is of the category universal. The other set are in a stricter or more special sense empirical, for they carry with them variation of what is called quality, secondary quality like colour or higher quality like life or consciousness.

Now, amongst these empirical relations some are intrinsic to the things and some are extrinsic. Thus a man as man stands in human relations to other human beings; for instance, he must be the son of somebody or possess sociality. But he need not be a king or a father or a servant. His intrinsic qualities are expressed in his intrinsic relations, which therefore are in a manner internal to him. But his extrinsic relations depend on circumstances, such as juxta-position or the environment, and when he enters into these relations they are in a manner external to him. This distinction corresponds to the logical distinction of what is essential to a thing and what is accidental to it. What is most intrinsic to a thing is its typical character, manhood for instance to man; but the intrinsic qualities and relations expressing them include what is specific to the individual and all the

so-called 'properties' which follow from them, as well as those truly inseparable accidents which are only properties awaiting the disclosure of their connection with the essential characters. Thus a man's relation to his kind is intrinsic or essential; but to have a son or a wife is an accident, and, thanks to death or the law-courts, it is what the logicians call a separable accident. It is plain that categorial relations are intrinsic also, but they are absolutely intrinsic, for nothing can be which does not carry into all its relations its categorial characters. What varies with the relation is the empirical character of the relation arising out of the category. A thing may now be above and now under another; it may be far off or near another thing, five feet or two inches longer than another. Extrinsic empirical relations may therefore be pure variations of categorial relations, or these variations may themselves be attended by qualities, as for example in the paternal relation.

Thus there are in fact three kinds of relations, the strictly categorial, the essential, and the extrinsic. The first two classes are both called intrinsic. Empirically intrinsic relations are relatively unalterable. So long as the things retain their individuality their intrinsic relations are not changed by entering into extrinsic ones. A man remains a man though he becomes a king or a father or a slave. But just because its qualities are empirical and not categorial, the extrinsic relation may alter the qualities of the thing. Thus a man may be brutalised by the possession of power, or become egotistic or parochialised by the concentration of his affections on his child to the neglect of society. Misfortune may turn him from a genial to a sour man, he may become a disappointed man. The qualities intrinsic to the individual suffer first, but extrinsic relations may affect even the typical characters. For example, in the stages of intoxication, where a man may be said to enter into an extrinsic situation, first his voice loses its individual character, then he loses the more typical capacity of rational speech, and finally the most typical of characters, the capacity of co-ordinated movement and locomotion.

A man may become subhuman by degradation or isolation, or monstrous by insanity, or he may by natural death or violence cease to be a man at all. No wonder that such extrinsic relations which alter the parties to it, seem to be external and indifferent to the real nature of the thing.

The  
ultimate  
question  
raised.

It is the contrast of the categorial and empirical characters and relations which is of the greater importance for metaphysics. For it sheds light upon the question whether the partial character of existents affects their claim to be considered real or true, whether, that is, we must allow reality to the parts or deny it to anything but the whole. The categorial characters of things remain, whatever extrinsic relations they may enter into, and hence their reality in these regards is unaffected. It is only the empirical modifications of these categorial characters and relations which are affected. Now partiality can only vitiate the reality of anything so far as entering into a whole changes the thing. Therefore the categorial determinations of things are perfectly and absolutely real or true. For, assuming them all to be fundamental determinations of Space-Time, we can recognise no higher standard of their reality. But empirical characters (whether modifications of the categories or qualitative) may be affected by extrinsic relations. Hence it follows that we cannot be sure that we have the intrinsic nature of a thing or a relation unless we have satisfied ourselves that no extrinsic relations will affect them, and universal propositions are therefore only possible under this proviso. This is the first limitation on empirical truth. There is a further question which the time has not yet arrived to discuss, for it belongs to the problem of the 'one and the many': whether the liability of all finites to suffer in their non-categorial intrinsic characters destroys their reality or only affects the difficulty of discovering it. But it will already be apparent that subject though they are to change, to conversion into things of different nature, this does not destroy their claim to be real so far as they are what they are. For they are of the same

stuff as the Space-Time which connects them and in which those relations arise which may alter or destroy them. They only become in changing, as for example by death, other variations of the same matrix, and they remain relatively real.

The difficulties which Mr. Bradley has found in the notion of qualities and relations<sup>1</sup> are due in the first place to the inversion of the natural order of things. Begin with the primordial fact of the parts of Space-Time in organic connection with one another; qualities and relations are then mutually implied without contradiction, because, as we have seen, the very notion of contradiction is a birth of Space-Time itself, which is the ultimate standard of reference. I return to this below. But put aside this consideration. The difficulties then arise from treating relations in the abstract as if they did not relate; the opposite error to that committed by those who, maintaining relations to be external, treat them as if there were nothing for them to relate.

Alleged  
contra-  
dictions in  
relations.

In the first place, relations are said to depend on qualities, and qualities on their relations, and this is thought to be contradictory. It could only be self-contradictory if the dependence were identical in the two cases. But Mr. Stout has pointed out that while relations depend on the qualities for their very being, qualities depend on their relations only for the fact that they are related, not for the qualities themselves. Thus the distance of Glasgow and Manchester arises from, depends on, is the manifestation of, the positions of those towns. But they do not owe their position to their distance, they only owe to it their distance. The towns must be there to be so many miles distant, but their distance is not something by itself which steps down and connects the town, but is the fact of their connection in space. Or, again, a man is a father because he is a male, whose functions have been realised; he does not owe his being a father to the paternal relation, but that relation implies his being a father.

<sup>1</sup> *Appearance and Reality*, ch. iii.

Mr. Stout has endeavoured<sup>1</sup> to simplify the discussion by adding to the notion of quality and relation that of "relatedness." Relations then depend on qualities for being what they are, but qualities depend on relations only for their relatedness. It is difficult to see, convincing as the argument is, that relatedness adds anything to enlighten the matter. It in fact suggests that relations can be relations without relatedness, that is without relating; otherwise the distinction would not be drawn. This is the very proposition which is contested. We have the conception of qualities independent of relation and relation independent of relatedness. The last is not a fact. Nor is it true that qualities can exist outside some relation or other, though there may be a quality, e.g. maleness, which may exist outside the relation of paternity. But then the male quality is in certain relations of its own, of likeness and difference, to the female.

Qualities, terms, and relations are alleged to be "infected" with the evil of the so-called infinite regress. But this allegation appears once more to depend on the abstraction of relation from its business of relating, so that we have the ironical result that relations whose externality Mr. Bradley strenuously denies are treated in effect as if they were external. The relation it is urged is itself related to the qualities. The paternal relation is related to the father. Thus for a relation to be applied a new relation is required, not of course the same as the original relation or necessarily so; and this intercalation of relations can plainly go on to infinity. But is it not clear that if a relation is itself in relation to its term, it is not doing its work of relating? If it really relates, it relates; by itself and without the interposition of a fresh relation. If A is the father of B, his paternity is continuous with, being the situation which connects, A and B. Similar considerations apply to a subtler form of the same supposition, that a relation can be one without relating. Consider

<sup>1</sup> *Proc. Arist. Soc.* N.S. vol. ii., 1901-2, 'Alleged self-contradictions,' etc., pp. 1 ff.

A as he is in the relation, say B, and as he is in himself, say C. There is then a new relation between B and C breaking out within A. But if B stands for a quality outside the relation, like maleness outside paternity, it is irrelevant, for this is not the quality which enters into the relation. If it does not, and the quality in itself is different from the quality in relation, the relation is being regarded as external to the quality, in other words, as not relating it to its correlative.

These reflections are, as it seems to me, sufficient to show that relations between terms and qualities though they present difficulties do not present inherent contradiction. But I am very ready to admit that in the form in which I have presented them, in the insistence that a relation must relate, there is an undercurrent which bears us back continually to the real and given fact of continuity contained in Space-Time, without which such a postulate that a relation must relate loses concreteness. Now for Mr. Bradley himself Space and Time are but special cases of the difficulties of relation; and he would repel the assumption of an original continuity, because continuity in its conceptual description is so patently a relation between terms. For us the criterion of contradiction is a derivative of Space-Time. For Mr. Bradley, Space and Time are to be judged in respect of reality or appearance by the human or reflective criterion of contradiction, which draws its authority from our thought. We are bound therefore to examine the alleged contradiction of Space and Time independently, and our answer must be that they seem contradictory because neither the Space nor the Time which is examined is real Space or real Time, I mean that it is not even the real appearance which it is alleged to be. For each of them is supposed really, and not merely as in mathematics provisionally, to be distinct from the other. When this error of fact is corrected, the arguments against their ultimate reality are seen to be fragile.

Suppose then (what is not the case) that relations and terms are only apparent characters of things, not ulti-

Space and  
Time—  
their alleged  
inconsist-  
ency.

mately real; and consider Space by itself. We may plausibly maintain two propositions which seem to contradict each other: first, Space consists of extended substances (shall we say?); and second, it is a mere relation. It cannot be substances, or spaces, alone, for these themselves contain parts and involve relation among them; and every term we choose for the relations breaks up into relations without end. "Space is essentially a relation of what vanishes into relations, which seek in vain for their terms. It is lengths of lengths of—nothing that we can find. On the other hand it cannot be a mere relation. For every such relation is a relation between terms which are themselves Spaces."<sup>1</sup> Space is thus neither a relation nor anything else, and the contradiction, even verbally, seems hopeless. But the spaces are supposed to be resting and the relations to be distinct from what they relate. Now there is no such thing as resting Space. It is essentially temporal. Spaces, if we could conceive them at all as existing by themselves, might be stationary, and the relation between two spaces might be a kind of mechanical bond, a relation which does not relate. It might be supposed even to be the connecting or intermediate space, but there would be no cohesion, and hence the contradiction. But Space is spatio-temporal. Now Time is of its essence fluid, is succession. The Time which is in Space drives on any space into connection with some other space, and secures to it continuity. Thus spatial relation is of the very being of any two spaces, for it is their connecting situation into which they are compelled by their time. The terms and the relations are distinguishable elements in one and the same empirical fact which is spatio-temporal. For the same reason any space breaks up into parts without end because the time which is in it distinguishes it into parts within the original piece of space; and the infinity of this process being vital to space is not the bad infinity which is the counterpart of our human helplessness, but the good infinity which is implied

<sup>1</sup> *Appearance and Reality*, ch. iv. pp. 36-7 (ed. 1).

in the real nature of the thing<sup>1</sup> and is self-representativeness.

Let us now turn to Time. If Time be taken apart from Space it is, as we have so often seen, a mere 'now' and can admit no before or after. The argument starts by affirming, what is true, that the now of Time implies before and after; but it takes a somewhat different form from the argument about Space. For there the parts of Space are presented together. But when they are taken apart from Space we cannot have present and past or future presented together. "Presented time is time present." But if the now involves before and after, there is a relation between before and after, and the puzzles of relation and its terms reappear. Either the now is a duration and breaks up into parts or nows without end; or if it is not a duration it becomes a relation between terms which are in themselves timeless, for these terms not containing a before or after are not time. Duration is either substantive and breaks up into parts, or a relation, or rather a number of relations, connecting timeless elements and therefore not having the unity necessary to time.

Now all this maze of difficulties (which I hope I have rendered the spirit of) comes from neglecting the intrinsic spatiality of Time. You may indeed admit that Time is represented by a line. The mere pictorial representation of Time by Space does not however help, for you are then faced with the difficulties alleged against Space. But if Space is of the very being of Time, Space sustains Time as it fades into the past or dawns into the future. It is then not true as an empirical fact that "presented time is the present time." The now and the then are presented as now and then, and are presented together but not in the present of the enjoying consciousness but, as befits them, the one in the present, the other in the past.<sup>2</sup> The then is never a part or aspect of the now. The now is continuous with the then which was and the

<sup>1</sup> For the distinction of the two sorts of infinite regress, see B. Russell, *Principles of Mathematics*, ch. iv. pp. 50-1, § 55.

<sup>2</sup> Above, Bk. I. ch. iii.



then which is to be. Space gives to Time its continuity as Time gives to Space its continuity. Space enables Time to be Time, that is a duration of succession. Any relation between moments of time is then a piece of Time itself, and duration is not a relation of the timeless but of the timeful; and while duration is made of the instants it connects, these instants are connected by duration. For the relation and the terms are of the same stuff. This possibility is overlooked by the antagonist view, just because Time is treated as unspatial, and consequently before and after have no attachment but are degraded into aspects of the so-called present. Just as Time drives the pieces of Space into connection, Space compels the moments of Time to remain attached, and not vanish into nothingness.

What Mr. Bradley has done then is to take a fictitious or abstract Space and Time and demonstrate that they are abstractions. The effort to show up abstractions can never be praised too much. But it is misdirected when it seeks to prove that realities, misdescribed so as to be abstractions, are abstract. And now mark the revenge which the universe takes upon those who do not accept it upon its own conditions. Thought which sets up its canon of satisfactoriness to itself loses its contact with the world of Space and Time which it declares to be appearance. The "what" of things is severed from their "that"; and thought moves in a world of its own. Thought which repudiates the Space-Time of which it is an element cannot be truly concrete.

Once more we return to the truth that the difficulties of continuity and infinity, of which these embarrassments as to Space and Time are examples, arise from neglecting the initial or crude continuity and infinity, positive characteristics, of Space-Time itself. The conceptual notions of continuity and infinity build up again the original which they have begun by dissecting. But it remains true that Space-Time itself in its empirical character is the basis of continuity and infinity, of order and series, and of all the categorial characters of things

which a thinking resting on human standards, not spatio-temporal ones, seeks to degrade into realities which in comparison with the ultimate are only appearances.<sup>1</sup>

<sup>1</sup> In a later chapter (*A. and R.* ch. xviii.), Mr. Bradley completes his assault on Space and Time by suggesting that there may be more than one Space or Time, and that in different Times the order may be reversed. This raises questions which belong to a later stage, when we are considering ideas in their relation to reality. I much regret that my criticism of Mr. Bradley should be thus divided, but I cannot discuss everything at once. (See Bk. III. ch. viii. Suppl. Note.)

## CHAPTER V

## ORDER

The category.

If order is a category it might seem eminently to be due to the interference of mind. The mind, it might be thought, compares things in respect of certain characters, *e.g.* magnitude or shades of colour, and arranges them in a scale in which any one thing precedes another and is in general between that other and some term which precedes itself.<sup>1</sup> But a moment's consideration is enough to show that such comparison depends on the characters and relations of the terms themselves, and, what is more pertinent, the acts which the mind performs in arranging terms in an order are themselves in order, only that the order is enjoyed instead of being contemplated. Thus if lines are ordered according to their increasing magnitude, the successive apprehensions of the lines are also ordered in magnitude.

We have order when there are at least three terms of which one is between the other two, that is, when B is between A and C. Order is a category of things because of betweenness of position in Space-Time. This betweenness is, as we have seen, a fundamental feature

<sup>1</sup> Compare B. Russell, *Principles of Mathematics*, § 231, p. 242, for the interdependence of order of any psychological element. "People speak of a series as consisting of certain terms *taken* in a certain order, and in this idea there is commonly a psychological element. All sets of terms have, apart from psychological considerations, all orders of which they are capable; that is there are serial relations, whose fields are a given set of terms, which arrange those terms in any possible order. . . . Omnipotence itself cannot give terms an order which they do not possess already; all that is psychological is the consideration of such and such an order."

in Time, and points in Space are between each other in virtue of the Time in which they are generated. What applies to positions in Space-Time applies equally to complexes in Space-Time. We may indeed have things or points which are contemporaneous. But they are between each other in space in virtue of the time in which their positions in space are generated. 'Between' is therefore a crude or elementary feature of Space-Time and attaches to the elements of Space-Time themselves and to complexes of those elements.

Betweenness which is the characteristic of order communicates with relation, and order may be resolved into relations. Thus, as Mr. Russell shows, terms  $x$ ,  $y$ ,  $z$  are in an order when there is a relation  $R$  such that  $x$  is in the relation  $R$  to  $y$  and  $y$  in the relation  $R$  to  $z$ , in other words, when there is a transitive relation between the terms, and it is asymmetrical. Thus if the relation is of magnitude,  $x$  is greater than  $y$  and  $y$  than  $z$  and  $x$  than  $z$ , and the relations of  $y$  to  $x$  and  $z$  have a different sense. If the terms are points of time  $y$  is before  $z$  and after  $x$ . This simplest of all orders is at the basis of all order. But though in this way order may be expressed in terms of relation, order is not a mere combination of relations. For the introduction of asymmetry into the transitive relation already implies betweenness. The transitive relation of equality of magnitude would not be sufficient for betweenness of magnitude. Such betweenness can only be generated by a relation which being transitive has direction and is therefore asymmetrical. Betweenness is a crude datum to which the conception of a transitive asymmetrical relation is due. Between is therefore as much a specific datum, though resolvable into two relations of different sense, as a motion along the diagonal is a specific motion though resolvable into components along the sides of the parallelogram. There, too, the mere components are not equivalent to the resultant unless they are really *components*, that is unless, in the language adopted by Mill, their collocation is also given. Betweenness being thus primordial, order is a category distinct from relation, just as existence is distinct

from relation though existence is always in relation to other existence.

Order involves at least three terms, and any three terms may constitute an order, under the conditions in which order is expressed relationally. Each term in the order is ordered according to the nature of that order. But not each term is necessarily between other terms. This is only the case when the series has neither beginning nor end; as in the case of instants or the real numbers. In the order of colours, in the order of precedence of nobility, in the order of species in a genus, and the like, there may be first or last terms or both which are not between in respect of that order; though they will always be between in the fundamental order of Time or Space. Further it is clear that when two terms are said to be in a certain order, as *e.g.* cause and effect in the order of priority, or two colours in respect of the order of hue or brightness; they are so described in so far as they are selected members from a real order: *e.g.* in causality the order of time.

A universal  
character  
of things.

Order is a difficult conception which I am unequal to the task of treating adequately.<sup>1</sup> What has concerned us here has been to indicate that like other categories it is a character of things which is a crude, primordial feature of Space-Time, and can only be indicated as such, or, if described, order is being described like continuity in terms of what is derived from it. It is difficult to discuss the conception at greater length at this stage, for the assurance that all order is in the end spatio-temporal can only be got from considering order in its more special determinations, like the order of numbers or of quantity, which we cannot yet assume to be spatio-temporal. Order has not usually been reckoned among categories at all, and does not form one of the Kantian categories. Yet that all things have order of some sort can readily be seen,

<sup>1</sup> Mr. Russell has treated it with great fulness, *Principles of Mathematics*, Pt. iv.

if it is only order of position in Time or Space, or quantitative or numerical order.

But the varieties of order are not only these categorial special orders but empirical ones; and some of these may be enumerated. Most important of all, perhaps, is the order of the qualities of a given kind or modality of sensation; for example, that of pitches of sound or hues of colour. Such order has of course no reference to the position of notes on a musical instrument like the piano, or of colours in the solar spectrum. It belongs to sounds or colours as experienced, that is as sounds or colours, which for us are *sensa*. It is an expression of their ultimate spatio-temporal character. Sounds form an order of pitches, ultimately because their wavelengths are a series in which each is spatio-temporally between two others, and could be known (not heard) as such if the sounds were produced from the one place. Mr. H. J. Watt has even maintained that pitches of sound and hues of colour are not differences of quality, but that there is only one quality, sound, or colour, and pitches and hues are merely terms in an order, determined by the one quality.<sup>1</sup> Whether the modalities or classes of sensible qualities themselves, sound, colour, taste, etc., constitute an order, cannot in the present state of our knowledge be asserted.

Besides this important example of empirical order we have such order as that of descent from father to child—the genealogical order, and we have the larger order of descent in animal types determined by distance from a common ancestor; there is the order of great-

<sup>1</sup> 'The elements of experience and their integration: or modalism,' *Brit. Journ. of Psych.* vol. iv., 1911. See also further papers in vols. vi., 1913; vii., 1914; and his later work, *The Psychology of Sound* (Cambridge, 1917). I do not feel inclined to accept his statement that sound is a quality and pitches merely their order (see below, p. 267), but should regard them as intrinsically qualities forming an order of qualities. On the other hand, when we are dealing not with the *sensa* but with the sensing of them, we shall see that the corresponding sensings are merely spatio-temporal patterns of response which have no pitch-quality (nor sound quality either), and in respect of them Mr. Watt's doctrine is true.

ness from the merest weakling up to the superman, or in moral matters the order of merit which belongs to actions not in virtue of their goodness (for "all goodness ranks the same with God") but in respect of their largeness or splendour. And the list might be extended to some length. Order is therefore far from being confined to purely categorial orders with which the term is so closely associated in the mind. But it depends ultimately in every case on spatio-temporal betweenness.

Order and  
the other  
categories.

Order communicates with existence, as being itself an existent, and as internally constituted of existents. It is relational in itself, and at the same time there may be relation between different orders, as for example in correlation of the order of general intelligence to order of sensibility in some department of sense. Lastly, it communicates with universality; it is a plan. And not only is order universal with regard to its categorial special determinations, like the order of number, but all these categorial orders are universal in respect of their empirical examples; thus we may arrange things in weight or brightness, or even numerical order may assume such particular forms as the order of even or odd or square numbers.

While order thus communicates with universality, its distinctness from universality is a more important matter, and at the same time more difficult to make clear. When points are considered in their order of position, the transitive relation is that of greater (or less) distance from a fixed member of the series (whether distance is taken as equivalent to interval or distance proper, that is unlikeness of position). The relation, distance from a given point, is universal to any of the distances of the points from the fixed point. But then it is not this distance which is the order itself; that order can be resolved into those relations, but is not identical with them. The order is rather that of position in the ordered series, and this is not the universal of the different positions in the series, but is the collective name of all

the positions. There is no true universal or plan of construction, to be called position in the series, of which the members of the series are modifications as different dogs are modifications of the plan or law of dog-construction. For position in the series or order implies the order as a whole. To hold that belief would be an instance of the concrete universal over again, like regarding the parabola as the universal of its points, or the State as the universal of its citizens, or the self as the universal of its activities. For a less elementary illustration let us turn to Mr. Watt's conception of pitches as the order of the one quality sound, or colours as the order of colour. It does indeed seem unnatural to hold that there is only one quality sound or colour; rather it would seem that, according to common usage, the pitches and hues are qualities which are ordered in respect of sound or colour. But what is of value in the doctrine is that it recognises order as an intrinsic (I should say categorial) character of the pitches and hues, and sound as such and colour as such are then orders named from the qualities of their members. Now neither sound nor colour is a true universal. There is no quality colour of which the various hues are instances, nor, though this is more difficult to verify, is there probably for experience any universal, sound, of which the various pitches are modifications, certainly no true universal, pitch. In both cases we are considering the colour or sound psychologically as experienced, that is as sound or colour, and not as physical complexes which follow a certain law, in which case both sound and colour are universals. This difference between the relation of colour to the colours, and that of a universal like dog to individual dogs, has long been observed. Mr. Watt's conception enables us to say that colour is the order of colours, and is, I should say, not itself a quality; and the like is probably true of sounds. Thus the order of individuals is not their universal; and individuals regarded as instances of a universal are not considered as ordered in respect of that universal.

Thus order is a characteristic of every existent, distinct



from other such pervasive characteristics, and communicating with them; and it appears undoubtedly to be a category and on the same level of rank<sup>1</sup> with existence, relation, and universality.

<sup>1</sup> For rank among the categories see later, chap. ix. pp. 322 ff.

## CHAPTER VI

### SUBSTANCE, CAUSALITY, RECIPROCITY

#### A. SUBSTANCE<sup>1</sup>

ALL existents, being complexes of space-time, are substances, because any portion of Space is temporal or is the theatre of succession; or what is the same thing because all succession is spread out in space. In other words, spaces and durations are not themselves substances as if substance were a notion anterior to them and applied to them; but because Space-Time is what it is, and every space is a duration and every duration an extension in space, substance is a determination of all things which occupy Space and Time. We are introduced here to a category which arises not so much out of the character of spatio-temporality taken as a whole given entity as out of the 'relation' (if we may misapply a word strictly applicable only to pieces of Space-Time<sup>2</sup>) between the spatial and the temporal elements in any space-time. For simplicity and brevity it will be enough to speak of substance as a piece of Space which is the scene of succession without stating the same thing in terms of Time, in the reverse order. Any existent is a substance in this account of the matter. Even a simple motion in

<sup>1</sup> For the subjects of this chapter, especially Substance, I have found much profit in Mr. C. D. Broad's *Perception, Physics, and Reality* (Cambridge, 1914), ch. ii. 'On Causation.' For substance, see especially pp. 94-6, which confirmed and helped me in views which were already in formation in my own mind. I have borrowed some of his language and illustrations.

<sup>2</sup> On the use of the word relation as between the space and time elements themselves, see some further remarks later, ch. ix. p. 324.

a straight line is an extreme instance of the life of a substance, though the motion be not repeated and the substance endures or remains identical only for the duration of the single motion.

But it will be easier to deal first with what are ordinarily called things which possess many qualities connected together, and to consider simpler substances in the light of the more complex ones. Qualities it is assumed are correlated with certain motions; and it is indifferent for our purpose whether the quality belongs, as will be here maintained, to the motion itself; or belongs to mind and is the mental correlate of the motion, as is the belief of those who distinguish primary from secondary qualities, but recognise a primary correlate of the secondary quality. A thing or complex substance is then a contour of space (*i.e.* a volume with a contour) within which take place the motions correlated to the qualities of the thing; and the complex substance or thing is the persistence in time of this spatial contour with its defining motions. Thus movements correlated with the quality yellow and others correlated with the quality hard are contained within the contour of the atom or molecule of gold. Within the contour the qualities are grouped according to the law of the construction of the substance. The various movements which constitute what has been before called that 'configuration' of space-time which the thing is, define a certain outline of space, that is, a certain volume of space with its outline. As Time moves on the substance may change in its characters or in the relation of them one to the other but always within the limits set by the law of its construction. Our most easily understood example of substance is found in our own mind. There the activities of mind change from one moment to another according to the objects which engage it. Sometimes indeed the consciousness located in one portion of the extended mind lapses into unconsciousness. But always we have under the various changes in the distribution of our attention in Time the same relative configuration of movements within the total outline occupied by our minds. It is the persistence of

this including space throughout a lapse of time, a persistence which means, as we have seen in our original account of Space-Time, a ceaseless redistribution (in the form of motions) of instants of time amongst points of space, which makes our minds a substance and a substantial identity. Or we may take as another instance an organism with different activities in different parts of the structure, all these activities constituting a configuration of space-time bounded within the space of the organism. Or we may, as on previous occasions, consider the organism as a substance from the point of view of the changing distribution in the maturity of its cells.

The persistence of a piece of Space in Time which results from the retention of the configuration of its movements according to its law of construction does not of course imply that the piece of Space is stationary as a whole. On the contrary, no substance occupies the same place continuously, if only because of the movement of the earth or other heavenly body, and it may change its place also by locomotion or transference. But the contour and internal configuration remain within limits the same, though not the position of the whole thing.

The movements underlying qualities may be complex and the configurations of a thing with qualities is undoubtedly very complex. In a simpler substance such as a vibratory movement which has the quality sound, the excursion of the vibration fills and defines a certain contour of space and a comparatively simple one. When we come to the simplest substance of all, the life of which is movement in a straight line, what we have is the occupation of the most elementary contour in space, *viz.* a point by an instant in time. To understand such simplicity we had first to understand the nature of more complex substances. It might be thought that the whole excursion of the point was the contour of the substance. But in fact the sweep of the movement is comparable to the translation of our mind (or say our body) as we move; only that in the simpler case the translation is the very essence of the life of the point whereas the essence of the life of the mind as mind is in the movements which take

place within the mind's spatial contour. For the point-instant is of itself motion, it is the element of motion. A point is not a stable or fixed thing but in virtue of its time is connected with some other point-instant. The meaning of motion is, as was noted before, not that the point of space itself moves as if it were a material body shifting its place, but that the time of a point ceases to be present, and the present is transferred to another point continuous with it. That is to say, the contour of the substance remains the same as the original point. The simplest substance is consequently a movement. When we take this movement in its limiting form we have the point-instant, which may thus be called a momentary substance. For a point-instant is by its very nature a movement, not something statical. It is an ideal, not an actual movement; and just for this reason it is the actual elementary existent, and is real just in virtue of its ideal character.<sup>1</sup> The conception of substance at this limit, at which it becomes momentary, is hardest to grasp, and I may add rewards most when it is grasped.

Identity of  
substance.

The identity of a substance is individual identity as persisting through a duration of time. Numerical identity was occupation of a point-instant or complex of them. Generic identity or identity of sort was the preservation of a plan of construction throughout repetition at different times or places. When the repetition of a plan is found in its varying phases in the duration of an individual we had individual identity. We see now that substantial identity is equivalent to individual identity. Before, under individual identity we were thinking of the universality of the plan of a particular in respect of the moments of its life. The notion of substantial identity represents these moments as woven together through the constant changes of its internal motions in accordance with a plan of construction. Individuality regards the repeated plan; substantial identity the persistence of the particularised universal or individual through a period of time. In practice substantial identity and individuality

<sup>1</sup> See on this subject later, ch. ix. p. 325.

are the same conception; and by the individuality of a thing is meant in general its identity of substance. This combines then the two elements of repetition of a plan with persistence of the contour of space within which the motions take place which obey the plan. Personal identity is a special instance of substantial identity. It means the coherence of our mental life within an extension which is occupied variously through the changing moments of our life. Only since the enjoyed spatial extension of our mind is overlooked we are apt to think of it as merely coherence in time, as if there could be such coherence except for the space which establishes it. In all cases it is the spatial contour which provides the unity of substance, that spatial extent being itself meaningless without motions to occupy it, that is without persistence in time.<sup>1</sup>

What changes are compatible with the retention of substantial identity is an empirical question which can only be decided by reference to each case or kind of cases. In the first place, it does not follow that qualities are always localised in the same part of the volume of the space or substance, though this appears to be the case with minds where the kinds of consciousness corresponding to certain objects are more or less definitely restricted in locality. Even organic bodies may change colour in different places as when we blush, or as in the crustaceans before mentioned which change their colour with the time of day. Under this head would come the famous question of Sir John Cutler's stockings which had been so darned with green silk that not a thread of the original black silk was left. Were the stockings the same or not? It would seem to be the case that though the stockings were not in the end of the same material the configuration of the motions within the substance had been preserved. In the all-important matter the substance had not ceased to be a stocking and retained its empirical identity.

In the second place, the contour itself may vary within limits without destroying the constructive plan, and so far

<sup>1</sup> For the problems raised by the lapse of intervals of mental life from our consciousness see later, Bk. III. chs. i. A and vi.

as this is the case the identity of substance remains. The main distinction of aggregates and organised beings lies in this, that an aggregate may be diminished without essential alteration, except naturally of those characters which depend on the aggregation as such, *e.g.* magnitude of the substance or strength of the material. This is because the components of such secondary substances are alike. Even here if a block of marble is chipped it is difficult, if the process of chipping continues long enough, to call the remainder the same marble; there is only a piece of it, the substance remains the same only generically. Organisms grow, and parts may be removed, it is found in experience, without destroying the identity of the substance, though the contour may be much altered, as by the loss of a limb. Everything depends on the importance of what is lost for the plan of the whole. We can only note these limits as they occur in experience. A man may lose a leg and not be much altered, while an atom may lose two alpha particles and become a different chemical body.

The empirical questions as to the preservation of the identity of mind and how, when it is ruptured, it may be revived, questions which have already been hinted at, will meet us again at a later stage of the inquiry. Another question belongs entirely to a later stage, and that is the relation of a thing or substance to its appearances; which of its appearances belong to the thing itself, which are mere appearances and imply something else in addition. This question, as indicated by the word appearance, concerns the connection of a thing with the mind or other 'percipient' and belongs to the empirical relations of things.<sup>1</sup> Here we have considered substance, as a union of qualities, as it is in itself.

That unity then is supplied by the space (that is the space-time) within which the qualities are disposed. Each quality inheres in the substance because it is included in the space which unifies the substance. Thus the proposition, this sugar is sweet, means that the universal sweet in an individualised shape, that is as a definite and

<sup>1</sup> Book III. chs. vii., viii.

particular motion, is found within the volume of the sugar. There is a complete difference between such a proposition and one in which the predicate is the class-concept of the thing, *e.g.* this is sugar, where the predicate is the total plan of configuration which determines the contour of the space of the substance.

A conclusion of some importance seems to be implied in this conception of substance. Not only is the inherence of the sweetness and the whiteness merely the fact that the motions correspondent to these qualities occur within the contour of the substance, but these motions occur in different places. The qualities of a substance do not interpenetrate. It can only be supposed that they do, if qualities are treated as mental creations or ideas and, because they are such, are somehow regarded as not being in space or time. But the motions at any rate which correspond to the qualities are separate from one another and differently located. They seem to interpenetrate only because not distinguished in our apprehension. The motion of whiteness (which for us is white) may to our coarse apprehension be in the same place as the sweetness; and we may say the sugar is white and sweet all over. But two different motions, when not compounded into a single-resultant motion, do not occupy precisely the same place. One may take place in the interstices of the other, as it were, and be indistinguishable for us in locality. When a body is sweet and white all over, the motions of whiteness and sweetness are repeated in various places and intermixed, as blue and red points of colour may be dotted over a page one set among the other. The motions of white are spread over the volume like stippled points in an engraving and the sweetness motions among them. Just as blood is seen uniformly red though only the red corpuscles in it are red, so the sweet and white stippling gives the impression (through different senses) of a uniformly sweet white thing.<sup>1</sup>

Qualities do  
not inter-  
penetrate.

<sup>1</sup> The above applies, at any rate directly, only to qualities (*a*) of different modality, (*b*) on the same level; *e.g.* the different secondary qualities of matter, of which I am mainly thinking. As to (*a*), the mole-



Thus a substance in respect of its qualities may be described as a space of a certain contour stippled over with qualities. There is no pretence of any mysterious support of qualities, such as Berkeley shrunk from and thought to be a "brute senseless somewhat." The support of qualities is nothing more nor less than the space-time within whose spatial contour they are united, they themselves being parts of the space, whose contour their configuration defines. For though we have spoken mainly for convenience of the space-contour, yet remembering that substance is persistence of this spatial contour through time, each moment of the substance being a particular of which the law of configuration is the universal (the singular universal), we must think of substance as a specially defined volume of space-time. The substance may be material or mental or living. But ultimately the substantiality of it is its defined volume of space-time.

Connection  
of qualities.

Within this volume the motions to which qualities belong are, primarily speaking, juxtaposed. But their relation is more than is expressed by the somewhat depreciatory name of juxtaposition. One of the great difficulties that have been felt as to the reality of substance is that it appears to be a mere aggregate of qualities. Sugar is sweet and white and hard and the like. But Space and Time are continuous, and to be within a volume of space-time is to be connected by a space-time. And in saying this we need take no account of the

cules of a tuning-fork vibrate with a single vibration compounded of those of the fundamental tone and the overtones. Is there here a single quality, or several separate qualities heard confusedly? (b) A higher quality, life, is a movement (see Book III. ch. ii. B) of living substance which carries with it movements, say of colour, in the material parts. I do not discuss these difficulties.

For the question under (a), see F. Brentano's *Untersuchungen zur Sinnespsychologie* (Leipzig, 1907), an extraordinarily stimulating book, to which I shall have to refer hereafter (Bk. III. ch. v., on the intensity of sensations). He speaks, however, of psychological sensory contents and the space of sensation (*Empfindungsraum*), not as I do of external qualities in an external Space.

purely empirical fact that within a substance which is compound there may be empty space-times or pores not included in the substance itself. How far the empty space-time, empty that is of qualities, belongs to the substance or not is an empirical affair. The space-time within which the electrons of the atom are supposed to circle about their nucleus, is perhaps not a pore in the substance but part of it, just as are the interstellar spaces of the solar system. On the other hand, the pores in a sponge do not belong to the substance of the sponge.

Now the space-time within which the motions are found which have their qualities (if they have any) makes these qualities into a continuum. Such an answer is sufficient. But more exact and explicit description of their connection is desirable. To supply this is a difficult matter, but it must be attempted. We have first to refer back to the general account of Space-Time. Structure we saw was provided for by the fact that any instant is repeated in Space, and there is therefore intrinsic simultaneity of certain points. Now given this fundamental connection as a basis, different lines of advance from it will leave us with events in the substance which are simultaneous with one another though of different qualities. Thus at least a whiteness and a sweetness condition of the substance may co-exist, not in virtue of a direct connection between whiteness and sweetness but as the joint outcome of processes beginning with the primordial connection. Qualities would on this showing be connected together by a remoter relation. This corresponds to the familiar (Lockean) notion that the various qualities of a substance are traceable to the nature of the primary qualities of their primitive constituents. The correspondence is of course not exact but on the contrary very inexact. But it consists in this, that the multiplicity of properties of a substance is not haphazard but rooted in some simple state of affairs which enables many qualities to belong together within one contour and to be in part simultaneous. For though any substance is, like the universe as a whole, doing its work at different times in its different parts when considered with reference to

some point-instant of it, there must be structure and simultaneity for it to be a substance at all. (This statement includes at the limiting case a simple movement.) A body, for instance, could not be dying all at once in every cell if it is to be a continuous structure. It was only the gradual darning of the black silk stockings with green silk which prevented them from being another pair of stockings. It is of course empirical what original movements are provided for in the substance. But an empirical connection is not the same thing as a purely haphazard one of mere juxtaposition.

But besides the remoter connection of organised movements, with their qualities, there is also the direct interconnection of qualities or movements such as is illustrated for us in the mutual support of the functions of an organic body by one another, the sustainment of nervous action, for instance, by nutrition, and the regulation of nutrition by nervous action. Here we have reciprocal action of different substances within the whole substance. This reciprocity means causal relation within the substance and is only possible through the connecting space-time. Reciprocity we propose to discuss presently. Now reciprocal actions are at a certain instant of time simultaneous; and so far as there is mutual interaction between movements within a substance there is a more special simultaneity of events within it.

On both grounds we are able to understand, though I confess the matter is difficult and the account given of it inadequate, how a substance can have many qualities at the same time. The connection in whatever form is a spatio-temporal one.

## B. CAUSALITY

Space-Time or the system of motion is a continuous system, and any motion within it is continuous with some other motion. This relation of continuity between two different motions is causality, the motion which precedes that into which it is continued in the order of time being the cause and the other the effect. Motion, like murder, will out, and no motion is indifferent to other motions within the universe. Thus the contraction of certain muscles in a boy's hand and arm is transformed into or continued into or replaced by certain intramolecular movements in a stone which constitute a translation of the stone at a certain velocity; this motion is transformed into the shattering of the window which the stone strikes. A blow from a bullet on a target is transformed into motions in the target which constitute a dent in it. An electric stimulation of a nerve ending is transformed into a movement up the nerve (I will not attempt to characterise the intimate nature of the movement, which is of a highly complicated sort) which ends ultimately in a sensation, which is itself a movement (or is correlated with one). A dose of digitalis so affects the pneumogastric nerve as to end in a cessation of the heart's action, which is equivalent to a new set of intramolecular movements in the heart and is not a bare negative, but only a negative of its previous actions. The motion of light, that is a motion of a complex sort in the supposed ether, at any rate the motion belonging to that substance which is light, is transformed into certain motions in a photographic plate, of a chemical order.<sup>1</sup>

It is immaterial, with our metaphysical conception of a substance, whether we describe a cause in popular

Causality  
and  
Substance.

<sup>1</sup> I have been helped in this chapter by Mr. Broad's discussion of causality (*Perception*, etc., ch. ii.).

language as a thing or substance affecting some other thing or substance and producing an effect in it, or in the stricter language of the logicians call the cause an event or process which precedes another event or process and without which the second event or process, the effect, does not exist. I say 'does not exist' in place of the common phrase 'would not exist,' for our only means of knowing what would or would not, or can or cannot, exist is to discover what does or does not exist. The popular notion of a cause as a thing is inadequate, for a thing can only be a cause in respect of the events in which it is concerned. On the other hand, the logical notion of causality as a connection of events is inadequate so long as an event is regarded as an isolated occurrence and not as a process which if the event is a cause is continued into the event which is its effect. With such static or statuesque isolation of its events the causal relation is a piece of philosophical mythology. But a substance is a system of motions and whether the cause is a substance or a motion is all one. A cause is the motion of a substance, or a substance in respect of its motion. Thus the cause of the breaking of the window-pane is the motion of the stone or the stone in motion. There need not be for the causal relation any other substance than the motion itself. A thing in motion is only a very complex substance in motion. We have no difficulty in conceiving the substance of light as causing a chemical effect, even without introducing the notion of an ethereal substance in which that motion is conveyed. The real reason why it is preferable to describe a cause wholly in terms of motion is that a thing is causal of its effect only in respect of the motion which is concerned. Thus a heavy stone breaks the window-pane in virtue of its velocity and mass. A grain of sand propelled with the same velocity might not have the same effect. We introduce the stone in order to note the mass which is engaged. But a thing may contain many qualities which are unessential to the effect. Thus, for example, a blow with a bat on the head or a blow with equal force of impact from an iron billet will produce the same

effect. It is the business of science to disengage in the action of substances what is the part essential to the effect. The rest admits of variation. The thing may be in this sense only the vehicle of the cause, in Bacon's phrase. The real cause is the motions which are continued into the motion which is the effect.

Causality is thus the relation of continuity between one substance and another, whether those substances be things or merely motions which we are not in the habit of calling things (*e.g.* light). The causal relation is the obverse side of the existence of a substance. For the category of substance communicates with that of existence. Every substance occupies a space-time. Now existence is other than and continuous with other existence, or it is in relation to other existence. Hence a substance, having existence, is at once different from another substance and continuous with some other substance. But all continuity is continuity of space-time; it is not merely stationary continuity but a moving one. Causality is thus the spatio-temporal continuity of one substance with another; and the cause is the motion which precedes that into which, let us say, it passes or is transformed. For we can find no words to describe something so elementary as this primitive crude relation except we borrow from particular instances of it, such as are implied by 'transformation' or 'passing into' or other such language. Substances share in the relational element of existence and that character of them is their causality in respect of some other substance.

One matter of importance should be noted before we proceed. A substance or motion or group of motions is causal only if it is continued into a different motion. Thus there is no causality in the continuance without change of the same motion. A body perseveres according to the first law of motion in its state of uniform motion in a straight line unless subjected to the action of an impressed force. But we cannot say that the earlier part of the motion is the cause of the later

Causality  
and  
uniform  
motion.

into which it is continued. For the later part of the unchanged motion is the original motion or substance. The bare continuance of a motion signifies no causal action from something else. Indeed the first law, if I may venture on the statement, does little more than say this. It declares that any motion is as such a uniform motion, and that its path should be a straight line hardly adds to our knowledge, for it is probably true that the very definition of a straight line is that it is the path of a uniform motion; the fact of uniform, that is unaccelerated and unaltered, motion being anterior to the notion of a straight line. It is only when motion suffers some change of acceleration or direction that it postulates a cause, and we then ask what motion it was preceding this result which was continued into the change. For the continuity of a cause with its effect means not that the cause is as it were lost in the substance which it affects, but that it is added to the motions already existing there. Hence the very different effect produced by one and the same cause in different substances. The stone which breaks a window-pane may only bury itself in a soft window-cushion or a mound of earth.

Thus the continuance of a motion requires no cause but that motion of which the uniform motion is the effect and this is different from it. A motion does not cause its own continuance, is not as it were the cause of itself, but is itself. Self-causality, so far as that notion is legitimate, requires a different interpretation.

The purpose of this observation is to guard against a mistaken doctrine that the cause of an event is the immediately preceding state of the thing in which the event occurs. For this would allow the position of a body in uniform motion to be due to its preceding position. Causality would become an insignificant notion if it could be applied with this looseness. There is an additional objection to the doctrine. It implies that a causal process can be treated as a succession of states, the proviso being that they shall be in immediate sequence. But there is no such thing as immediate

sequence in a continuous series, the very nature of which that there is no next term to any term. A cause is not an event followed by another event, as if the events were states of a substance. For out of such events neither continuity nor substance could be constructed. A state which is the cause of another state of the same thing can only be an ideal section of a process or motion. And thus interpreted, the proposition that any state of a thing is the effect of a preceding state can only mean, if it is to be true to Space-Time, that motions at any instant are continued into different motions by what is called immanent causality.

All causality being the continuous passage of one motion or set of motions into a different one is transeunt. Immanent causality is nothing but transeunt causality between the substances which are contained within a substance. Thus, for instance, the passage of the thought of an action within our minds into the realisation of that thought in actual fact is (in part) immanent causality. A better example would be the internal repression of a wish where the whole action seems to go on within the mind, though undoubtedly it requires the presence of the body. The intramolecular actions of a body, or the interactions between the parts of an organic system, or the interconnection of movements within the system of an atom are other cases of immanent causality. The distinction is clearly a relative one, and merely a matter of convenience in description. A case of transeunt causality between two independent substances like the cricket-ball and the bat is immanent causality, if the ball and the bat and the intervening space are taken to be a single substance, as they may with perfect legitimacy be taken to be.

Transeunt  
and im-  
manent  
causality.

Moreover, the distinction is relative in another and more important sense. No substance is self-contained as being disconnected from the rest of Space-Time, and therefore from other substances. The immanent causality of an organism is sustained by the environment. Nervous action is affected immanently by nutrition,



but nutrition is an effect of external substances, and nervous action contains essentially motor-response to the surroundings. When a thought brings about its own realisation in an act of will the immanent process is the transition of the thought into a perception and that is purely mental, but it implies the action of the body on its surroundings so as to produce the physical conditions, e.g. the lifted weight, which are perceived in the act of perception. To suppose an absolutely self-contained substance is in fact to omit the fact that it belongs to Space-Time, or rather perhaps it is to suppose that the Space in which it exists is stagnant instead of being essentially temporal. Even an atom is but a substance precipitated within the matrix in which all substance grows. The only self-contained reality in which all causality is immanent is the universe itself, and its immanent causality is but the transeunt causality of the existents it contains. But the infinite whole itself is not a cause, for the categories are only determinations of finites or other beings within Space-Time which these parts of the whole owe to the properties of any space-time. Thus when the universe is spoken of as self-causing, this is either an illegitimate phrase, used metaphorically of the whole; or, when it is used with a clear apprehension of its meaning, it signifies only that the various movements within the world are the outcome of other movements in a different distribution. In other words, the immanent causality of the universe is, to repeat ourselves, only another way of expressing that every existent in the world is in causal relation with other existents. Only in this sense is the world *causa sui*. All other self-causality is relative, it merely omits the dependence of the substance on the rest of Space-Time.

Summary.

Causation is thus a perfectly definite character of things; it is the continuity of existents within continuous Space-Time as subsisting between substances, which are themselves motions or groups of motions. Like all the categories it is pervasive and no substance escapes it. Causality is nothing less than this fundamental relation between substances. But it is also nothing more. No

conception has been so persistently riddled with criticism. It has been declared from the point of view of logic to be either useless or superficial; from that of metaphysics to be self-contradictory. All these complaints seem to me to depend on taking it either to be more than it is and to have a meaning other than that which it has in the usage of science and especially of physics; or else to take it for less than it is, and to omit its characteristic features. To consider these criticisms in detail would be a task of much time, and all that I can hope to do is to touch upon them and in the main to let the exposition speak for itself. But before doing so it will be better to complete the positive exposition of causality, though there will necessarily be a latent reference to destructive criticism.

In the first place, then, the cause is a different motion or set of motions from the effect. The mere continuance of the same uniform motion is as we have seen not a causal connection. The only identity between cause and effect is to be found in their continuity. We are not even to suppose that the moment at which the cause takes effect or the effect begins to be caused is as it were a meeting-point of the two motions; as if there were some single point in which the two processes overlapped. The continuity of the causal relation would be destroyed by the supposition. It would be a revival in a new form of the ancient puzzles of motion and the paradox of Achilles: the causal motion and the effect motion being broken up into steps of a progression. If this were the case the cause would not produce its effect, nor the effect begin, the point in question being the limit which the cause would tend to but never reach.

Cause and effect different.

It might be urged that the cause is actually carried over into the effect; as when, to take a very simple case, a shove on a moving body accelerates its motion. But this is no mere persistence of the original motion; that motion is replaced by the acceleration of another motion. When the stone shatters the window there is not even the semblance of its continuance. The cause is

only continued in the resultant of itself and the original motion of the patient. Now a resultant is what it is and different from the components. Other cases of a qualitative sort may mislead similarly, like Hegel's example of the rain, which is the same water in the air and in the ground which it wets. Really, the effect is something quite dissimilar: the falling water is distributed differently from the resting water. In the action of digitalis on the heart, not even such accidental simplicity is to be found. The effect need not be like the cause and rarely is. And it never is identical with the cause. That would be uniform motion and the universe would be a blank.

Cause prior  
to effect.

Causality is essentially a temporally continuous relation and the cause is prior to the effect. Movements, and substances generally, may be simultaneous with each other but the relation is not one of causality. It is either, first, that of reciprocity where action and reaction are simultaneous; but a reaction is not the effect of the action but is the answering causality of the patient on the agent. This covers the simultaneous existence of qualities in the one substance where the qualities affect each other mutually. Or, second, the simultaneity may be the persistence of the same effect owing to the persistence of the cause; so that the effect of one dose of the cause is simultaneous with the next dose of the cause. In this way things, as bearers or vehicles of cause, and effect are simultaneous but not the cause simultaneous with its effect, not the particular dose of the cause simultaneous with its own effect. Or we may have simultaneity of motions which arise from points inherently contemporaneous. Otherwise simultaneity of cause and effect does not exist and would imply that the relation was merely a spatial one.

As it has been urged that cause and effect are identical with one another, so likewise it has been urged that cause, as it takes effect, occurs at the same instant with the effect as that effect begins. But this is either a tautology, or is untrue. The cause is the process in so far as it precedes the effect and the desire to find an

identity of time between the two arises again, it is probable, from supposing the moments of the process to be contiguous instead of continuous.

It is essential therefore to causality that causation proceeds from before to after. Consequently it is only in a logical sense that the effect can be held to determine the cause as much as the cause the effect. We can only mean by this that when the cause and the effect are precisely stated they are reciprocal: when the cause, that is, is purged of what may indeed occur in a particular case but is accidental to it, and when the effect is stated in terms so precise as to presuppose one cause only and not a choice of several; when, to take the familiar example, the death from drowning is distinguished from the death by hanging, and the two not lumped together under the general designation of death. The reciprocity of cause and effect means then that unless there were the precise effect there would not be the precise cause. But such determination is logical and not real determination, and the effect cannot be interchanged with cause except as a basis of inference. We cannot in any real sense therefore say that the future determines the present, for the future is not yet and a future event introduces the order of Time. In that order the future does not determine but is determined. The present would not be what it is unless it causes the future which it actually does cause, but to regard it as dependent, except in the above logical sense, on the future is to take Time half as an accidental feature of the universe and to contemplate the world as spatial instead of spatio-temporal. Thus it is in no sense true that the future drags the present into its future condition as if it operated *a fronte*. All causality is *a tergo*.

This might seem to contradict what was said in an earlier chapter<sup>1</sup> of the experience of the future in enjoyment. We anticipate something in our minds and this anticipation was described as the enjoyment of the future, not as present but as future. Now such anticipation leads on to performance, and hence it would seem that in this case

<sup>1</sup> Book I. ch. iv.

at any rate the future is causal. Why not therefore extend this consideration and explain teleological action as action which is determined by the future end to be attained ; so that animals and men are dragged to their issues from the future ? The answer to this is to distinguish between the future event as it will be when it is actual, in which case it becomes not future but present ; and the future as it is enjoyed, before it is realised. Such enjoyment is the future in idea, and this is the only way in which the future as future can be enjoyed. This future enjoyment is causal to its own realisation as a present. But this enjoyment drives us not *a fronte* but *a tergo* like all other causality. The transition is still from the before to the after. For the future as future precedes the future as it is when it has become a present and precedes it in the order of my enjoyment. In the same way my enjoyment of the past as past precedes in my enjoyment, as it should, the real present, for it is only by dragging the past up from the depths of memory, "the dark backward of time," that I enjoy it as past. When, on the other hand, the future is said in any other than a purely logical sense to determine the present (just as much as the past obviously does), the future is taken to mean the actual distant event, and then the statement is untrue and falsifies the significance of Time. If Time be taken seriously all causality proceeds from actual present to actual future, and is never determined by the actual future. It may be determined by the future as future but this forms no exception to the proposition.

Causality  
a limited  
relation.

Finally, the causal relation is a relation of existents. One substance is the agent and the other its patient which suffers its effect. Agent and patient together form a relatively closed system and, as we have seen, within that system the causality is immanent. There is no causal relation between the infinite whole and any one of its parts. There is only such relation between one part and another. The whole system of things does not descend into the arena and contend with one of its creatures. The business of science in its search for causes (and it is not asserted that this constitutes the whole business of

science) is to discover what precise events are connected as causes with what other precise events as effects. The task may be one of infinite difficulty and may at best lead only to probable propositions. The rules of the logic of discovery are rules of procedure in this quest. Where the causal connection can be established, it is done by an elaborate machinery of negative instances, by which the cause is narrowed down so as to contain only so much as is relevant to the effect.<sup>1</sup> Where experiment is not possible other devices of approximation have to be used which supply the place of experiment. In the amusing prelude of the *Sophist*, Plato attempting to get a definition of the sophist employs his method of division in order to "hunt the sophist down to his lair." What science does is to hunt down the cause of an effect to its lair. It may not establish exact connection but only a remote one. Yet it seeks, in the phrase of Mr. Venn, to screw the causal circumstances up closer and closer to the effect. This procedure is not open to the objection that the only satisfactory statement of a cause is the whole universe. If this were true the idea of cause would indeed retain a certain usefulness in practice, but as a theoretical basis of procedure in science it would be useless. But the objection rests on a misconception. It assumes that the operation of the stars is a motion which interferes with the causal act by which a man knocks another down ; and does so because there is direct or indirect connection between all parts of the universe, throughout Space-Time. The question rather is whether the intimate causal relation mentioned is interfered with by the rest of the universe which undoubtedly sustains it. The question is the same as when we ask whether the properties of a triangle which undoubtedly imply the Space from which the triangle is delimited are affected by the sustaining and surrounding space. What science has to do is just to discover these limited, intimate, relations of existents which are called causal ones. Everything which it finds by inquiry relevant has to be included and becomes part of the substances involved. Everything which, though its

<sup>1</sup> Bosanquet's *Logic*, vol. ii. ch. iv. pp. 115 ff. (eds. 1 and 2).

presence is assumed, does not interfere so as to control or vitiate, lapses for the special causal relation into the position of an immaterial condition. So much at least follows from the fact that the world itself is not a category and cannot be a cause.

Causality,  
no power,  
nor force.

We can now ask how far the modest but pervasive category of causality is open to the objections raised against it, which have grown into a formidable revolt against its authority. Hume's great service to this topic was that he purified the notion of causality of anthropomorphism; he denied or rather he failed to find in experience any power in the cause to produce the effect or any necessity in their conjunction. It is true he read experience amiss. For though no cause exhibits mysterious power, it possesses a relation of connection which Hume with his inherited conception of an atomic experience made up of single and isolated pieces was unable to detect. Subsequent philosophy has been engaged in restoring the connection which he overlooked. But the spectre of power and necessity which Hume laid has been busy with men's minds and is accountable for the discredit upon which causality has fallen.

No notion of power or necessity is contained in the conception of causality as a category. Still less is the connection an anthropomorphic one. The experience we have in our own persons of causality is so far from giving us a notion of mysterious and unexplained efficacy or power, that it is but an example of the same relation as we find outside ourselves in external events. Rather we must say that power is the continuous connection which we observe in ourselves and can more easily and directly observe in ourselves in enjoyment than outside us in contemplated events. Our power is an instance of causality; causality is not the work of power. But since the idea of a power in the cause to produce its effect suggests that the relation is presided over by something akin to spirit,<sup>1</sup> some entity behind the relation which

<sup>1</sup> In the sequel (Bk. III. ch. ii. B) it will be maintained that ultimately there is in all things something which corresponds to spirit in ourselves.

brings it into existence, we are perhaps well rid of the conception which is harmless if it were once "defecated" in Coleridge's famous phrase, "to a pure transparency." Defecated conceptions still retain their body and colour in the general mind.

We need therefore shed no tear over power; and we may view with equal equanimity the discredit of force which has followed power or is in course of following it to the place where those notions are preserved, which are not so much false in themselves as such that the mind cannot safely be trusted to use. With power in the cause to produce the effect may go necessity of connection. The only necessity which philosophy can recognise is that of inference. But there is no necessity in things except fact. Nothing is added to causal relation by the adjective necessary. Every fact carries with it necessity, the necessity at least for the human mind of accepting it. There is no other necessity even in mathematics, which is often regarded as the special domain of that goddess. It is a fact that a triangle's angles are equal to two right angles, a fact which is discovered by inspection as all facts are discovered. It is only the extreme simplicity of the triangle, that it has none but empirical spatio-temporal character, which induces us to think that the connection of its form with the property named is necessary. For mathematics is no exception to the rule that science is empirical, and that its discoveries are won by attention to the nature of its subject-matter. Not even metaphysics is exempt, though its experienced material is non-empirical in nature. 'Must,' if I may repeat myself, was made for human beings in the relation

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But the point of that doctrine is not so much that things are spirits, as that spirit is only an advanced form of something which is found lower down in all things. Our awareness of power is but our consciousness of the causal relation between our will and our acts. The mischief of the conception that a cause has power to produce its effect is that it introduces some mysterious element of connection other than that of simple continuity. Hume went too far in the opposite direction. For us causality is not so much an example of power as power is an example of causality.



of superior to subject. It has no part in science ; though the science of man takes account of 'must.'

Objections  
to causality:  
(1) from  
logical  
atomism.

Stripped of these dangerous anthropomorphisms the principle or law of causality that any event has a cause means nothing more nor less than the proposition that a motion is continuous with some precedent motion. Such a principle is not necessary but *is* non-empirical as following from the nature of Space-Time and not from the nature of the particular events that happen to be connected in space and time. It is difficult to understand how in this sense it can be dispensed with, unless science is to avow itself a mere tabulation of isolated facts reduced to generalisations. It is worth while glancing at some of the reasons which seem to make the idea of cause dispensable. One of them is that causes and effects regarded as substances or things are in the first instance qualitative, and it is only in the initial stages of science that we are concerned with such relations of qualities. Fire expands bodies, digitalis stops the heart ; propositions like these are merely the first steps beyond empirical descriptions. The further science goes the more it concerns itself not with connections of qualities but with measurement and with processes or motions ; how much heat is related to how much elongation, what processes there are set up by digitalis which are connected with the heart's cessation. Moreover, it is not only relations between independent substances which demand investigation but in an eminent degree the constitution of things in terms of primary qualities ; not what heat does but what heat is ; what are the primary processes which underlie the world of qualities, or, in the technical phrase, which are the ground of qualities.

Thus the higher stages of science become to a large extent attempts to formulate in quantitative terms the processes which occur in nature. What we seek is not causes but formulae, expressible in equations. What place is here for cause? What is there in the law of gravitation which involves cause? Did not Newton himself in declining to make hypotheses as to the cause

of attraction limit himself to the formulation of the facts compendiously stated in that law? What else is science but such a set of compendious formulae? "In the motions of mutually gravitating bodies," says Mr. Russell,<sup>1</sup> "there is nothing that can be called a cause and nothing that can be called an effect ; there is merely a formula." But apart from the fact that the deeper reasons for such formulae remain a subject of inquiry (the cause of gravitation is an actual problem of physics), a formula such as that of gravitation involves two elements. One is that of quantitative description of the motions that take place. On its other side, the formula asserts the reciprocal determination of two motions by one another, and this implies causality on the reasonable conception of what is meant by the causal relation. Qualitative causal laws are replaced by quantitative formulae, but so far as science aims at connecting together motions it is observing the law of causality, only in a less undeveloped form. I am bound to pass by the more explicit doctrine of Mach and his followers, that cause is but a useful means for shortening the work of description, for this doctrine implies a conception of thought which is inconsistent with our hypothesis of the relation of mind to things. Concepts are for us either realities or they are nothing. They may indeed be erroneous, but even then they are objective. That science is made by inventing concepts which are verified by experience is a perfectly true account of how we come to know. That our concepts are nothing more, are not (if we could but get the right ones) actual constituents of the objective world and not merely inventions of ours, this is at least not the principle on which we are conducting our inquiry.

Another reason for the discredit of causation is the sheer misconception of it for which philosophers are themselves in part responsible, that it means not a relation of connection but a frequency of conjoint occurrence. Two events apparently presumed to be disconnected may be taken to be cause and effect when if one is repeated

<sup>1</sup> 'On the notion of Cause,' *Proc. Arist. Soc.* N.S. vol. xiii., 1912-1913, p. 14. Reprinted in *Mysticism and Logic* (p. 194).

the other is repeated—'the same cause, the same effect.' Attention has been diverted from the nature of causality itself to the nature of the conditions under which we can succeed in discovering causal laws; and the notion of the causality of a cause has been confused with the universality of the connection. An easy triumph is thus prepared for those suspect causes. There is no event which is repeated, and a conception of causality which is nothing but the repetition of a brace of events would indeed be useless. Now we have seen already that repetition, not bare identical repetition but under variations, is essential to the existence of a law, but is distinguishable from the contents of the law. The causal relation of two events is the relation between the events whereby they become immanent action in a single substance composed of the two events and of what is needed to unite them. The causal relation is not the repetition of the pair of similar events. The truth is that without the repetition we should not discover laws, and that at best owing to the great complexity of things and the great distance of actual repetition from mere repetition we can only hope for approximations to certainty. The practice of the logicians has been enough to show that the causal relation is not equivalent to the criterion 'same cause same effect.' For it is vital to the discovery of causal relations that in the absence of a cause the effect is absent. This criterion it is which gives meaning to the negative instance. It is no doubt a legacy from Hume that the world should be broken up into disconnected events which are found together or in succession in experience. But Hume, to do him justice, did not attribute any causal relation to the events themselves, as his successors did, but to the expecting mind. I can only account for causality's still being held by those who profess adherence to Hume to be a relation, by supposing that relation is understood to be something that can be said about things and not a concrete set of transactions into which they enter.

The extreme of atomism is reached when causality, supposed to be equivalent to necessity and based on

identical repetition, is considered to be an ideal limit constructed by the mind which is at the opposite extreme to complete independence of two things on one another. What science then has to discover is not causal connections, which are mental, but real correlations. No one would undervalue the formulae of correlation proposed with this end in view. But it is surely plain that this view is inspired by the fear of the bogey of necessity, and that unless we are to regard the world as made up of discontinuous units, against the spirit of our hypothesis, there is no meaning in correlation except as a first approximation towards the more intimate relation of direct or indirect causality; that we proceed statistically by establishing correlations where direct experimentation on causes is not open to us. The quest for correlation implies that events are determined, and determined in reality and not merely logically, by one another in a certain order.<sup>1</sup> To discover such determination, the weighing of numbers may at one stage of a science be our only means. We aim at the plan of things by numbers where the plan is not immediately or directly accessible.

It is from an entirely different point of view, in fact on the very ground of the systematic interconnection of things, that a different school of thought depreciates the relation of cause and effect in comparison with that of ground and consequent. We have followed them in maintaining that what matters in science is the connections of things. For us therefore the discovery of the cause of an event or motion or thing with qualities is the detection of what precise motion or group of motions or things or events is continuously connected with the effect. The cause and effect make a system involving process. But it is urged by the writers in question that a cause as a mere event in time contains something

<sup>1</sup> Compare chapter v. on 'Contingency and Correlation—the insufficiency of Causation' in Mr. Karl Pearson's *Grammar of Science*, Part I. (London, 1911, ed. 3), with Mr. A. Wolf's remarks in *Proc. Arist. Soc.* vol. xiii. N.S., 'The Philosophy of Probability,' §§ 3-5.

(2) from  
logical  
idealism.

irrelevant to the characters of the system. Time has for them the taint of relative unreality and it infects the cause. And they point to systems like those in geometry where no Time, as they allege, is involved. Cause as an event in time is an incomplete ground, and the scientific ideal would be rather that of a system or the pattern of geometrical ones.<sup>1</sup>

It was this ideal which Spinoza employed, and the inadequacy of his effort to make causal connection satisfactory might have served as a warning. In truth it would rather seem that whereas, according to these writers, the relation of ground and consequent is fundamental and that cause and effect adds something irrelevant, the relation of ground and consequent eviscerates the causal relation of its essential element of Time: implication is a notion posterior to causation. Time is indeed supposed to be mere 'time,' mere succession, and it is such 'time' which is suspect. But there is only one sort of Time and a sensible event in time possesses that time-reality. If we mean mere time, a cause is not an event in mere time. If we mean real Time, Time is itself part of the ground. The ground of any consequent is fundamentally process and is spatio-temporal. Either therefore process is essential to the ground or else the cause or event in time which is irrelevant to the ground or which is the ground in an imperfect form is not the real event which is intended by cause. The preference of ground and consequent to that of cause and effect is in fact an attempt to translate what is essentially temporal, where Time is taken as real, into something stationary. To do so we must reintroduce process into the stationary contents of the ground, as when our subject-matter is itself historical, *e.g.* in psychology or physics. The example of a geometrical system is misleading. For stationary Space is but Space-Time with the Time omitted, and the omission is legitimate if it is only supposed to be provisional. The preference in question depends on the confusion of what is timeless with

<sup>1</sup> For the topic of this section see Bosanquet, *Logic*, vol. i. pp. 264 ff. ed. 1 (252 ff. ed. 2).

what is independent of any particular time, as all universals are.

Real grounds are to be distinguished from logical grounds, though they may coincide. The real ground of any event or character, when it is not merely the so-called formal cause, which is equivalent to the fact explained, as when vibrations of the ether are called the cause of light, being in fact identical with them, is a complex of motions of which the event or fact to be explained is the causal outcome. But logic, if we may anticipate a later chapter,<sup>1</sup> is the science of truth, or of how our beliefs, as expressed in propositions, are to be systematised into a coherent whole at the guidance of reality. For it therefore the reason why or 'because' is not always the cause; whereas in reality the reason is the "moving why" of which Burns speaks. When A is equal to B, and C also, neither B nor the equality of A and C to B is the cause of the equality of A to C. All manner of good reasons for a conclusion are different from the cause of the fact stated in the conclusion. The cause is always a reason, but a reason need not be the cause. But we are not therefore free to regard the logical ground because it is the more general in logic as superior to the relation of cause and effect in the reality. Truth is like a work of art and has its own prescriptions, always dictated by reality. We go about to arrive at reality by methods proper to truth, and we are able to dispense in certain cases with direct reference to causal interrelation. But the ideals of logic cannot be used to depreciate the causal relation.

These are difficulties which affect the use of causation in science and logic. Metaphysically it has been maintained that causation is not reality but appearance. For us since the universe of Space-Time divides itself into motions and yet retains its continuity, the continuous connection of motion with motion is as much ultimately real as the Space-Time of which it is the history. But the charges brought against it on metaphysical grounds

<sup>1</sup> Bk. III. ch. ix. B.

(3) from  
meta-  
physics.

may be lightly touched on here, for either they imply that causality is a relation which does not relate or they depend on misinterpretation of continuity. Thus when causation appears to be obnoxious to the infinite regress, for that A should cause B there must be some third thing C which moves A to its work, it is assumed that a cause is not itself causative. It is waiting for an inducement. Something, as Mr. Broad so well puts the point, is wanted to stir it into activity. But its real activity consists in passing over into its effect.

In the next place it is urged, by Mr. Bradley, that causation can neither be discontinuous nor continuous, or that it must be both, and is therefore contradictory. It cannot be discontinuous and must be continuous, for if it were discontinuous the cause would persist unchanged for a time and then suddenly change. Again, it is apparently assumed that for a cause to work it must have an inducement. But the cause does its work not by a change in itself but in leading on into something else. A cause might well remain unaltered for a time and then finding its patient produce its effect. The proposition that causation is not discontinuous is indeed true but not for the reason stated. Equally it is said causation cannot be continuous for the cause would then be without duration. "The cause must be a real event, and yet there is no fragment of time in which it is real."<sup>1</sup> This appears to mean that a cause must occupy a finite time in order to act; which is the assumption already rejected; and it appears also to assume that a continuum is put together out of adjacent points (in the likeness of spatial points), whereas the essence of a continuum is that being neither space-positions only nor time-positions only, all its points are instants and all its instants points. A continuum is a process and causation is a process. If the cause is something stationary, causation is indeed inexplicable. But it is in fact not stationary, and its continuity does not mean that at any one instant the cause is succeeded by something else which begins at the next instant but that any instant is the point of passage of a

<sup>1</sup> *Appearance and Reality*, ch. vi. p. 61 (ed. 1).

motion. To repeat an often-stated proposition, continuity is the conceptual formulation of motion itself, and, hard as it may be to say where cause ends and effect begins, yet if cause is itself a process and effect another and different one, the relation between the two is the transition of the one which is earlier into the later motion, or group of motions.



## C. RECIPROCITY

The  
category.

Causality is a relation between substances in virtue of which a motion or group of motions in the one is continued into a motion or group of motions in the second and thus alters the pre-existing motion of the second substance. Now the second substance, or the patient, is already a motion or group of motions, and the effect which the cause produces is determined by the second substance as well. The transaction into which the two substances enter, so far as they constitute a closed system, is a two-sided and not a one-sided transaction. It is one in which each partner is cause and effect in turn. The situation which is the relation of the two substances is from the point of view of the first an effect on the second, but from the point of view of the second an effect on the first. The action of A on B is *ipso facto* an action of B upon A. In the transaction each partner exercises its own causality; the effect on B is a continuation of motions in A, and the effect in A is a continuation of motions in B. There is thus only one total situation arising from the relation of the two and it appears as an effect in B of A and an effect in A of B. Thus the pull of the horse, in Newton's example, on the rope attached to a heavy stone is a pull of the rope on the horse; the push which I give the earth by the intramolecular movement which follows my will to jump is the push of the earth upon me which actually is the jump that I am said to make. When a ball strikes another moving in the opposite direction, the motion imparted to the second in one direction is precisely the same transaction as consists in the rebound of the first ball. When a moving ball overtakes another moving ball the acceleration imparted to the one is a deceleration of the other, and the one ball loses its motion to the other, which it accelerates, just because of the internal movements of the second. One motion

evokes an alteration in another motion into which it is thus continued, but it does not act upon the void, and the pre-existing motion which it accelerates is continued as an element in the same transaction into the acceleration in a contrary direction of the overtaking ball. In other and more familiar words, an effect is produced only in what resists. Every action is at the same time a reaction. But this does not do away with causality. The action of A on B is the causality of A. The effect on B is posterior to the motions in A. The reaction of B is its causality exercised upon A, and is posterior to the previous motions of B. Reciprocity between A and B is therefore reciprocal causality. Moreover, the reaction begins at the same moment as the action and two bodies in reciprocal action are simultaneous so far as concerns this moment. Thus the reciprocal attraction of the earth and the falling stone is a single transaction which is the beginning of the two opposite movements of the earth to the stone and the stone to the earth. It is this kind of case where the transaction is so obviously a single event, viz. the diminution of the distance of earth and stone, which has induced some to omit the element of causality, the earth on the one side and the stone on the other, and attend only to the mutual accelerations, inversely proportional to the masses of the parties engaged.

The simultaneity of two interrelated substances in respect of their action on each other is irrespective of the continued existence of the substances, such as we find in what Mill calls permanent causes, like the earth or other heavenly bodies. The substances might act on each other in virtue of their life and the life expire in the interaction. It would still remain true that the action and reaction would begin simultaneously in the dead substances left. Where we have permanent causes the two sides of the transaction are being constantly renewed and the two interacting processes persist beside each other.

Two interacting substances form a system or single substance. What is true of them is true also therefore of

Corollaries.

the substances within a substance, such as the qualities of a single substance or the parts of an organic whole. There is simultaneity between such actions and reactions within the substance, and here we have such account as I am able to give of the structural character of things apart from its intrinsic simultaneousness. The various parts of a substance sustain each other by reciprocity and so far there is simultaneity. But it is the result of causal process and therefore of succession.<sup>1</sup>

The same thing holds true of independent substances. When they come into relation they are in reciprocal action and simultaneous in respect of certain processes. This simultaneity is thus an outcome of the successive character of Space-Time. Once more both in respect of single things and in respect of the world as a whole, we come back to the truth that apart from the intrinsic necessity of some simultaneity of points, the fact that at any one moment Space is filled with some event or other is derivative from the successiveness of Space. A purely simultaneous Space would be a Space which perished with its perishing moment. A Space which is occupied by Time at various stages in the intrinsic succession of Time allows both for the persistence of Space and for its complete occupation at any moment.

Mechanical and organic reaction.

Action and reaction are conceptions drawn from mechanics and founded as now we see in the nature of Space-Time itself. The question may be raised whether organic reaction falls under the same head. In particular it might be asked, if a luminous body is the cause of our visual sensations, do we in vision react on the luminous object? It causes vision in us, but do we alter it? The answer will illustrate the real nature of action and reaction. For the character of the reaction depends on the nature of the body affected, and so does the effect produced by the cause. Now owing to the complexity of an organic body the characteristic effect of the cause may be only a remote effect. Thus the immediate mechanical effect of light is pressure on the eye, and

<sup>1</sup> Above, ch. vi. A, p. 276.

there is mechanical reaction to this. But the psychological effect is remote and arrived at through a long chain of action, whether chemical or not I need not inquire. It takes time for the mental effect of light to be produced, but when it is produced there is at the same time an action on the part of the organism of motion which is commonly spoken of as the motor reaction. This motor reaction is an integral part of the whole situation in which the action of the light ultimately takes effect. For it is a short-sighted insight which supposes that the sensation of light is something which occurs first and then releases the motor action which ultimately leads to turning the eyes to the source of light. We may rather see reason to believe with Mr. C. S. Myers<sup>1</sup> that the actual sensation depends on the type of the motor response and that the sensation emerges with the motor process. Thus when the light produces its effect on the centres of vision the organism with its preformed structure is reacting towards the external world.

We must thus note first that the reaction of the organism may be remote as compared with the first effect of the stimulus. And again it will be very complex in the end if the whole substance directly or indirectly affected is complex. Hence, to quote a famous argument to which we shall recur later in another connection, a telegram may leave me cold which owing to its contents may throw another person into profound agitation of mind and of response. In the next place the essential character of the reaction may be masked by the difference of the conditions here and in a simple mechanical response. For the reaction may take effect not so much on the source of stimulation as on other objects. In general and as a matter of fact organic reactions are in their outcome directed towards the stimulus. The organism performs motions which are designed to secure more of a pleasant and less of an unpleasant stimulus, by what Mr. Baldwin has called a circular process, or a process of imitation, which repeats itself. The sight of a tasty

<sup>1</sup> *British Journal of Psychology*, vol. vi., 1912: 'Are the intensity differences of sensation quantitative?' I. § 1. See later, Bk. III. ch. v.

thing reacts in the seizing of it to eat. Our reactions are in the first instance practical and do tend to return upon the object. But the object being only remotely the cause of the visual reaction, the reaction to it may be directed on some different object. Thus in purely intellectual apprehension of the fruit the reaction may take the form, in the end, of speech. Or an insult may be avenged not on the person of the culprit but on some one else, or a man may recoup himself in the circle of his home for the vexations he has suffered from his business. These are complexities arising from the complexity of the situation and of the organism. What concerns us to observe is that any action on the organism issues upon the external world sooner or later in some part of it, whether directly connected with the original source of the stimulation or not. The organic reaction considered in its complexity is the issue of the organism's affections in effects upon the external world. And they are not without grounds who look upon an organism as an apparatus whereby actions received from outside are converted into effects upon the outside world again. The simplicity of mechanical action and reaction is not to be expected in these cases where we compare the ultimate source of action and the ultimate shape and locality of reaction. The equivalence of action and reaction may however be traced at every stage of these highly complex transactions.

## CHAPTER VII

### QUANTITY AND INTENSITY

THE category of substance was as we saw a feature of any space-time which arose from the relation between the elements of Space and Time in it to one another. Existence was the occupation of a space-time. Substance was the persistence of a space in its time or the occupation of a space by a duration. Causality and reciprocity were relations of substances. The categories to which we now come, quantity and intensity, or, to follow Kant's terms, extensive and intensive quantity, also arise from various essential relations within Space-Time of Space and Time to one another. As regards nomenclature, I shall follow Mr. Russell in using quantity as the concrete term and magnitude as its corresponding abstract term. Magnitude is to quantity as universality is to universal or causality to the concrete relation of cause and effect. Thus quantities may be equal to one another but their magnitudes are not equal but identical. In ordinary practice the term intensity is used indifferently, I think, for intensive quantity and its magnitude. So too magnitude and extensive quantity are commonly used convertibly. But while any magnitude may be greater or less than another magnitude, it is convenient to be able to describe equality of quantity by a distinguishing phrase, identity of magnitude. Moreover when in what follows quantity is used by itself, it stands for extensive quantity.

As before, quantity and intensity are not concepts which can be applied to spaces and times, but they are features of things which are complexes of space-time

because of certain characters belonging to any space-time. Extensive quantity is the occupation of any space by its time or rather the occurrence of any space in its time, or what is the same thing, the occupation of any time by its space. Space as so occupied is a length or area or volume. Time as so occupied is a duration. Of two spaces generated by the same motion the greater space occurs in the greater time, and the greater time occupies the greater space. More or less of a motion is more or less extension in space or time, the space traced out being in correspondence with the time in which it is traced; and this is extensive quantity—that is the crude or initial character which the thought of quantity represents. Quantity is thus equivalent to the bare fact that Space is swept out in Time, or that Time is occupation of Space.

Intensity or intensive quantity, on the other hand, is the occurrence of various spaces in the same time, or what is the same thing, the occupation of the same space by different times. The simplest case is the velocity of a simple motion. The same time occupies a greater or less space according as the motion is fast or slow; or the same space occurs in a greater or less time, according as the motion is slow or fast. A less simple but still simple case is the intensive quantity of a sound. If the pitch remains unaltered the louder sound has the greater amplitude of vibration; more space being contained in the same time of vibration. Thus while extensive quantity is the fact that a space is occupied by its time, whatever that time is, intensive quantity is the fact that Time may be filled by Space and Space by Time unequally.

The ground of this distinction is that a space (or a time) is both a whole and also a continuum of parts. Considered as a whole, a space is traced out by its time and more time means more space, by what we are accustomed to call, with the use of numerical notions, the addition of space to space. That is to say, when two spaces are compared, for instance two lengths, the one space covers the extent of the other and something more.

But a space is also a continuum and infinitely divisible. Now two spaces, say two lengths, may be traversed in the same time, for owing to the continuity of Space and of Time there is a one-to-one correspondence between the points of the two unequal lengths of space and between them and the time which is also a continuum. Thus intensity is a relation of Space to Time in virtue of the continuity or infinite divisibility of each, which secures that the time being the same it may be filled with any extension of space; and the space being the same it may be filled with any extension of time. Extensive quantity is an affair of addition; intensive quantity is an affair of concentration, or in numerical language of division.<sup>1</sup>

Thus extensive quantity belongs to existents so far as the space and time of their space-time vary together; they have intensive quantity so far as one or other remaining constant the other varies. In Kant's language, in extensive quantity the idea of the parts makes that of the whole possible; in intensive quantity the idea of the

Measure-  
ment of  
intensity.

<sup>1</sup> An excellent illustration of the difference between extensive and intensive quantity is provided by a problem which arises in psychology or psychophysics in connection with the estimate of just perceivable differences of length of lines as measured by the eye. With lines of moderate length, the just perceivable difference follows Weber's law and is approximately a constant fraction of the length. But when the differences of length are larger we tend to equate not fractional but absolute differences, e.g. the difference of 5 and 7 inches seems equal to that of 10 and 12 inches, not to that of 10 to 14 inches, as it should if Weber's law held. H. Ebbinghaus, from whom I borrow this account (*Psychologie*, vol. i. § 45, pp. 504-5, ed. 1, Leipzig, 1902) explains the reason very clearly. When the difference of length is very small we compare the two lengths taken altogether, measuring by the movement sensations of the eye; and we compare two impressions which have different strength or intensity. But when the differences are larger, we tend to superpose one line on the other and find out the actual difference by subtraction. Thus in the second case we compare the lines as extensive quantities; in the first, we are as it were considering the lengths intensively. There is an apparent contradiction here with the statement of the text that extensive quantity arises out of the relation of the time to the space in spaces taken as wholes; whereas here we say that in taking the lines intensively we take them as wholes; but a little reflection shows that the contradiction is only apparent.



whole makes the parts possible. It follows from this that one quantity may be added to or subtracted from another; it is but a matter of the shorter or longer generation of the two quantities. But an intensity cannot be subtracted from another nor added to it. All that we can do is to have a series of intensities which can (again in Kant's language) decrease from any given intensity downwards to zero; or increase from zero upwards to a given intensity; as when hot water cools and its temperature decreases in intensity continually, or as when the note of a tuning-fork dies away in loudness. An intensity is not increased by adding to it a fresh intensity; but only the additional stimulus, increased by a measurable extensive dose, brings about a condition of intensity which is unitary and has more of intensive quantity than the intensity with which it is compared. Psychologists have often urged this point in respect of the intensity of sensations, that the sensational intensity (for we are not concerned with whether sensations are extensive) is something complete and single and that it is unmeaning to add or subtract the intensities of sensations. Hence extensive quantity is directly measurable, for extensities may be correlated directly with numbers and this constitutes measurement.<sup>1</sup> But intensities are not measurable directly but only indirectly. That is, we can make a scale of intensities beginning with some one arbitrary intensity as a standard, and arranging the others at various distances from this standard, and we can measure in this way the distances of intensities from one another. Thus the intensity of temperature is measured by the numbers on the scale of a thermometer. In dealing with sensations we may arrange intensities in a scale where each sensation appears to sense to be equally removed from its predecessor on the scale. So stars are arranged in order of their magnitude, when the star of the first magnitude is as much brighter than one of the second as that in turn is brighter than one of the third.<sup>2</sup>

<sup>1</sup> B. Russell, *Principles of Mathematics*, p. 176.

<sup>2</sup> The measurement of intensities as an arrangement of unitary intensities according to their intervals is admirably explained by H.

Intensities are thus indirectly measurable by correlation with what is directly measurable. It is therefore incorrect to maintain that because intensities are unitary, they are not measurable at all. For measure depends on correlation with the series of numbers and this correlation is possible even in the case of intensities. What is true is that 'more or less' means different things in the case of extensive and intensive quantity. Intensities are more or less as being further or nearer from a standard intensity. They constitute therefore a class whose members are primarily ordinal and are a series. The class of extensive quantities may be arranged ordinally, but the ordinal arrangement is secondary, for extensities differ not merely by unlikeness but by actual distance in space or time. Intensities are intrinsically ordinal and are secondarily correlated with numbers, whether with the arbitrary divisions on a thermometer, or, as in the case of sensations, in the experiments which attest the law of Weber, with the extensive measures of their stimuli.

The intensity of sensations, that is of processes of sensing, is a particular case of the categorial character, intensity, at a highly developed stage of empirical existence. We have been concerned with the category itself as applicable to finite existence at every stage, and have tried to trace it to its root in the relation of Space and Time within Space-Time. This account of the matter is so closely allied to Kant's difficult but famous doctrine of the 'Anticipations of Perception,' that it may be worth while to pause for a moment for a word of comparison. Kant established once for all the difference between intensive and extensive quantity, and the debt which psychology in particular owes him in this matter has been too little acknowledged. But his purpose was not psychological. Since there is in sensation, which is empirical, a filling of the moment of time with an intensity

Comparison with Kant's doctrine.

Ebbinghaus, *Psychologie*, ed. 1, vol. i. Bk. I. § 6, pp. 60 ff. Cf. also Introduction to E. B. Titchener's *Exp. Psych.*, Quantitative (Instructors' Manual), New York, 1905.

which cannot be regarded as made up of parts by successive addition, Kant urged that there must be in the object intensive quantity or degree. For since Time cannot be perceived by itself, that is without something which occurs in it; and much less therefore the filling of a Time with various intensities of sensation; there must be in experience itself something to account for this awareness of the filling of time. This 'degree' in the quality of an experience is not itself empirical, that is, in our phrase, it is not one of those characters which vary from bit to bit of experience but is pervasive. It must therefore be referred to the mind itself; it is one of those elements of objective experience whose non-empirical character Kant recognises by such reference. In this way the mind 'anticipates experience' by the axiom that any perception must have some degree (or intensive quantity) or other. From our point of view, the non-empirical element in experience is not referable to the mind but to Space-Time itself and it has nothing to do with anticipation at all and nothing specially to do with perception. But in essentials I have been following him. Only, Kant seems unable to give a satisfactory account of the reason of intensive quantity. He contrasts with extensive quantity the intensive filling of Time by sensation, but he can only explain this by reference to the empirical fact that a given intensity of sensation can decrease to zero in time. It is true that the sound falls away in loudness in a lapse of time, but this is only the empirical consequence of the filling of the moment of time from which the fall of intensity began; and there is no definite connection established, if any can be, between the lapse of time needed for the vanishing of the sound and the intensity of the sensation. As we have seen, that intensity is to be explained by the connection of Time with Space.

Just as intensive quantity depends upon Space-Time itself and not upon mind, so and more obviously does extensive quantity. Quantity for Kant arises in the process whereby the mind traverses in time an extension in space, so that we apprehend quantity in the act of adding homogeneous parts to one another. Quantity is

in this sense the work of the mind. For us Space-Time is sufficient of itself. For Space-Time containing a moving principle, Time, generates quantity. No mind is needed for the "composition" of Space, nor could Time, as Kant himself so often urges, help mind to the composition of Time without Space. Space-Time therefore does the work of itself without making an appeal to mind.

## CHAPTER VIII

### WHOLE AND PARTS ; AND NUMBER

Whole and  
parts as  
categorical.

EVERY existent is a whole of parts, because Space and Time, in different senses, disintegrate each other. Time breaks up Space into spaces, and Space enables Time to consist of times. Each of them, as we have seen, secures the continuity of the other ; Space by supplying connection to the fleeting instants of Time, Time by providing elements within the blank identity of Space. It is but repeating the same thing in other words, when we say that, besides sustaining each other's continuity, they break each other up. Time disintegrates Space directly by distinguishing it into successive spaces ; Space disintegrates Time indirectly by making it a whole of times, without which whole there would be no separate times either. Considered by themselves they have no parts ; they owe their partition to one another in their mutual involvement, and they divide each other in correspondence. In this division Time plays the directer rôle and takes the lead.

What applies to Space and Time as such applies to any space or time as they exist in any empirical being. Everything is in the end, in its simplest terms, a piece of Space-Time and breaks up therefore into *parts*, of which it is the *whole*. It is purely an empirical matter, that is a matter arising not from the fundamental character of Space-Time but from the empirical grouping of parts within it, what the whole may be. It may be a line or a volume in which parts are united continuously. It may be an aggregate of things with definite qualities, a pile of shot or a company of soldiers, or a library of books,

or a collection of quite heterogeneous things, like the contents of an antiquarian shop or the different members of our bodies. The *things* thus aggregated are not themselves continuous but discontinuous ; but they are continuously related by the space and time which intervenes between them. There would not be aggregate wholes composed of individuals but for the connecting space-time. But the individuals, owing to their specific qualities, form an isolated object of interest apart from their connection within Space-Time, and it is the space-time which they themselves occupy which is resolved by their separation from one another into parts. Moreover it is these aggregates of 'qualified' individuals which being nearer to our senses are our first experience of wholes ; and it is later and by some effort of reflection that we first dissect individual aggregates like bodies into their constituent parts and later still observe that a bare extension is itself composed of parts. But it remains that the intrinsic resolution of Space-Time through the internal relation of Space and Time is the basis of all distinction of parts, no matter how loosely the whole is united of them.

Number is the constitution of a whole in relation to its parts ; and it is generated in the concurrent or correspondent distinction of parts in space and time within a spatio-temporal whole. It may be described indifferently as a plan of resolution of a whole into parts or of composition of parts into a whole. All existents are numerable or possess number, because in occupying a space-time they occupy parts of space in correspondence with parts of time. It matters not whether the parts be equal or unequal, homogeneous or heterogeneous in their qualities ; or whether the wholes are of the same extent of space-time or not. A group consisting of a man and a dog is as much a two as a group of two men or two shillings ; though its parts are unequal in quantity and different in quality ; and as much two as a group of two elephants or mice which occupy as wholes very different quantities of space-time. To arrive at the number of a whole of

individuals we have to abstract from the quality or magnitude of the individuals. Their number concerns only the constitution of the whole out of its parts or resolution of the whole into them. In itself number is the correspondence of the space and time parts which is involved in this resolution; but it is a consequence of this that the number of a group establishes a correspondence between the members of the group and those of any other group which has the same number-constitution. All twos correspond to one another in virtue of their twoness, that is of the plan of constitution of the whole from its parts. Number is therefore the plan of a whole of parts.

Number is a different category from extensive quantity, though closely connected with it: quantity communicates with number. They are different because it is a different relation of Space to Time which lies at the basis of them. Quantity expresses the fact that Space is a duration, or that Time sweeps out Space in its flight. Number is the concurrent resolution of either into parts. But since this is so, quantity is directly numerable, for in the generation of a quantity there is the making of a whole of parts by successive addition of the parts. Kant in making number the 'schema' of quantity noted the connection of the two, but mistakenly overlooked the more important difference. The category whose schema is number, if any such distinction of schema and category could possibly be recognised, as it cannot, would be not quantity but that of part and whole. Intensive quantity does not communicate directly with number, for it is not a whole of parts. The connection is only possible indirectly through correlation of intensities with extensive quantities.

Number a  
universal.

Being a plan of constitution of a whole of parts, number is universal or communicates with universality. It is a non-empirical or *a priori* universal, arising out of Space-Time as such. The various cardinal numbers, 2, 4, 7, etc., are empirical universals which are special plans of whole and parts and are species of the category

number. These special numbers have for their particulars the groups of things (or even of parts of areas or lines or hours) which are apprehended empirical embodiments of these universals. Thus the number two is embodied in two pebbles, or two men, or two inches, but is never to be identified with them. The King's gift to mothers with triplets is given for the triplets, not for the number three. Nor is the number two a mere abstraction from concrete groups of two things but is the plan (itself something concrete) on which this group is constructed. Hence however much the observation of collections of things may provoke us to attend to numbers and their combinations, we no more derive arithmetical truths from the things in which they are embodied than we derive geometrical truths, such as that the two sides of the triangle are greater than the third side, from actual measurement of brass triangles or three-cornered fields. These are not the foundations of arithmetic or geometry but only the devices by which kind nature or our teachers cajole us into the exercise of our attention to or reflection upon numbers and figures themselves. Figures in geometry and numbers in arithmetic are the empirical objects so described which we observe for themselves; and numbers are empirical universals in the same way as triangle and sphere and dog are empirical universals. Thus the special numbers are the variable and shifting material in which number as such, the category number, is embodied. This rarefied, but still concrete, material is what Plato described under the name of the "indeterminate dyad," indicating by the name dyad its capacity of multiform realisation of number as such, and pointing by this superb conception to the way in which we are to understand the real relation between a universal and its sensible particulars.<sup>1</sup> It is therefore by no accident but in virtue of the intrinsic character of number and numbers that universality was represented by him as number and the particular universals or forms as particular numbers. It is only elaborating still further the appositeness of this

<sup>1</sup> See J. Burnet: *Greek Philosophy from Thales to Plato*, ch. xvi. pp. 320 ff.



conception when we try, as I have tried before to do, to explain all universals as spatio-temporal plans that are realised in the sensible particulars, which are in themselves spatio-temporal existents constructed on those plans.

Unity. Arithmetic then is the empirical science whose object is the special or particular numbers (themselves universals) and the relations of them. One conception remains difficult, that of the number 1, itself.<sup>1</sup> It has sometimes been thought that 1 or unity depends on the act of thought (*e.g.* in counting) which constitutes an object one. But clearly this could only be true if the act of thought were itself enjoyed as one, and thus the explanation would be circular. Now it is safe to say that unity is a notion posterior in development to multiplicity. That 2 is equal to  $1 + 1$  is not the definition of 2 but something we learn about it, and Kant was perfectly justified in calling such a proposition synthetic. Probably the greatest step ever made in arithmetic was the elementary discovery that the numbers could be obtained from one another by addition of units, or before that stage was reached, that 6 could be got by adding 2 to 4. The numbers are to begin with distinctive individuals, as distinct from one another as a triangle from a square.<sup>2</sup> Enumeration was a reduction of this distinctive difference in the empirical material to a comprehensive law of genesis. Bearing this in mind, that numbers have different numerical quality, we may see that unity is the whole which is the same as its parts; or to put the matter otherwise, any object compared with a whole of two parts or of three parts, could be arranged in a series with it, in so far as in the single object the whole and every part coincided. That is, unity is a limiting case of the distinction of whole into parts in which the distinction has vanished, or it is a piece of Space-Time before its division into parts. Thus unity is rather that which is

<sup>1</sup> I do not attempt the difficult problem of the number zero.

<sup>2</sup> Compare on this matter F. H. Bradley, *Logic*, pp. 370, 371; and below, p. 319.

left when 2 is removed from 3 than what is added to 2 in order to make 3. In any case it is a discovery that given a series of numbers, 2, 3, 4, etc., there is a number, unity, belonging to the series and based on the same concurrence of Space and Time as the numbers, from which the other numbers may be derived by addition, when addition is suitably defined. I say, suitably defined; for it is clear that though we may add together things, we do not add together numbers in the same sense; but the sum of two numbers is the plan of a whole whose parts correspond to the parts of each of the two numbers when they are taken together. We discover in this way empirically that 12 is  $7 + 5$  and  $1 + 1$  is 2.

Unity it may be observed in passing is different from a unit. It has sometimes been thought that a number is a multiplicity of equal units; but, as we have seen, number has nothing whatever to do with equality of parts in a whole. A unit is in fact a thing (or even a piece of Space or Time) which is used for purposes of measurement. Measurement is effected by securing correspondence with the series of numbers. The simplest and most convenient method of doing this in dealing with things is the adoption of a unit of the same stuff as the thing and taking wholes whose parts are each the unit thing.

Finally, the reference of number to the corresponding parts of space and time within any space-time may serve to explain why as a matter of history the extension of the idea of number from integers to fractions, irrationals and other numbers has been accomplished in connection with geometrical facts and has arisen out of them.

In this account of number I have ventured to differ from Messrs. Frege and Russell's often-cited definition of cardinal number as the class of classes similar to a given class; though it is clear that so far as my version of the matter may be taken to be correct it is arrived at by reflection on their doctrine and is suggested by it, and is merely a translation of it into metaphysical language. In fact they define number in extensional terms, which is proper to mathematics, while the account here given is

Number in extension.

the intensional side of the same subject-matter.<sup>1</sup> Moreover, it has been indicated that if number is the constitutive correspondence of Space and Time whereby a whole is a whole of parts, it would follow from this that there is correspondence between the members of all classes which have the same constitutive number. From the side of extension then a cardinal number may be described as a class of such classes. But this description starts with entities belonging to classes; that is it begins with finites, at the very lowest finite spaces or durations, and number is defined by reference to them. Just for that reason the definition tells us something which is true about number, but does not tell us what number is, any more than to describe man as the class of men tells us what man is. It gives us a description of number and not acquaintance with it. It is thus not a metaphysical account of number but something which follows from number; and it would not therefore, so far as I can see, explain why any existent is numerable. Before, it has been suggested that this method of defining number makes it amenable to mathematical treatment, and that it offers a notable instance of the difference between mathematical and metaphysical treatment of the same thing. Consequently it is not in the least pretended that the account here given could be used for making arithmetical discoveries; while on the other hand the extensive definition of number is. It is not the business of metaphysics to make discoveries in arithmetic, which employs such concepts as are most suitable to its own purposes. The metaphysical definition may be useless for mathematical purposes. It is enough that it should be useful for metaphysical purposes. The two accounts refer to the same reality; but while the one, the metaphysical one, points to it with the finger, the other describes it.

Number  
and  
counting.

Number is apprehended through counting, but the act of counting does not explain number. Number is a category which belongs to all existents as wholes of parts

<sup>1</sup> Hence it will be observed this account applies directly to all numbers, while the definition by classes applies directly only to integers.

in Space-Time, and it applies to mind and mental acts in the same sense as to external things. The whole of enjoyment experienced in counting five is a whole of mental acts and has number like the external thing that is counted. Hence we learn number in counting groups of material things, as in exchanging sheep and oxen for cowrie shells or dollars, or in measuring lengths by our feet, or estimating the height of a horse by our hands. But the counting itself is only compresent with number and is itself numerable.

Since number is constitutive of a whole of parts, we do not count unless we experience a whole as made of parts. Hence it is that as a matter of fact we may find processes performed which simulate counting, but where objects are taken in, we say, as a whole, but not as a whole of parts. A thing may have parts without having its parts recognised as parts and without therefore being in the strict sense a whole. We take in a crowd by its individual look of magnitude or extension. A boy may identify a card used in a musical-box, pierced with a vast number of holes in an intricately complex arrangement, and name its tune; but he clearly is not counting or discriminating parts. Many of the performances of animals which seem like counting may, as Mr. Bradley has pointed out, be explained without reference to counting. Apart from any indications that may be given by human beings to the animal, a group of three things looks or feels different from one of two; and this may be sufficient for the purpose. It cannot be said that the arithmetical powers of the lower animals have been established, and scepticism is not unbecoming in respect of horses and dogs, no less than of pigs. If such capacity of real counting were established our estimate of animals or ourselves would undergo some modification. But it would at most be a chapter added to the story of when and how the mind comes to apprehend number. Metaphysically the interest of counting does not lie here but in the fact which may be verified in all the categories that when the mind is aware of number it also enjoys itself as number.<sup>1</sup>

<sup>1</sup> See later Bk. III. ch. vi.

## CHAPTER IX

### MOTION ; AND THE CATEGORIES IN GENERAL

The category of motion.

THE last in our list of categories is Motion itself, along with Space and Time which are in fact always equivalent to motion, though they may be taken provisionally in separation. The question may reasonably be raised whether motion is a category at all and not rather the lowest form of empirical existence, for all such existents are motions and complexes of motions. But in fact, though every empirical existent is some sort of motion or other, it is the sort of motion which it is that makes it empirical : whether a straight line or a triangle or a wave-motion such as that of sound or light or the neural movement that corresponds to a sensation as enjoyed. That it is a motion or a space or a time is *a priori* or non-empirical ; and in fact the category of motion is but another expression of the fact that every existent is a piece of Space-Time. But the category is not Motion, taken as equivalent to Space-Time as a whole, nor are Space or Time as wholes either of them a category, as it will be the office of the succeeding chapter to explain at such length as may now seem necessary. Space-Time is the one stuff of which all things are made and is not itself a category but a singular, to which terms applicable to things are applied only through the necessities of speech. Accordingly the category we are now dealing with is more properly described as a motion or a space or a time, or by their abstract terms—motion, spatiality, temporality. Everything is a motion, a space-time.

It might be objected that a motion or a bit of Space-

Time is a really existent concrete thing and therefore cannot be a category. Such an objection would imply a complete misunderstanding of the nature of categories. They are not expressing mere adjectives of things, but concrete determinations of every space-time. Existence is the occupation of any space-time. Universality for all its abstract name is a concrete plan of arrangement of space-time, relations are connections which are themselves space-times. Abstract characters are separations made by us from concrete things ; but what we are referring to are concrete determinations of things. There is therefore no difficulty from this point of view in treating motion or a motion as categorial. A more serious objection would be this : we must recognise that a motion has a character allied to and of the same kind as quality. There is a motion-quality as there is redness or sweetness. Motion is not a succession of point-instants, but rather a point-instant is the limiting case of a motion. So far we have seen Mr. Bergson to be right in his protest. But while all other, empirical, qualities are correlated with motions, the 'quality' motion is purely spatio-temporal, that of being a space-time. There is nothing but the spatio-temporal fact ; there is nothing superinduced upon it. The quality of motion which a motion possesses in its indivisible character is, if I may repeat a phrase, a limiting case of empirical quality. It might be called a categorial quality were it not that, as will presently be stated, quality, that is empirical quality, is not categorial at all. Once more the exigencies of language constrain us into using such terms as best we can find for describing the indescribable. For motion is elementary and there is nothing simpler.

I follow therefore the guidance of Plato in reckoning motion as a category. For Plato it is one of his "greatest kinds of beings," which are what we call categories. Unfortunately he combines it in a pair with rest, which is not an independent category but only means, as we have seen, the absence of comparative motion in reference to some given motion, and is in fact a relative term. For Plato indeed the doubt we have raised as to whether

motion is a category at all, but only the first form of empirical existent, could not arise. Even if we are entitled to consider the *Timaeus* as much as the *Sophist* as representing his own view and not merely that of his Pythagorean friends, motion must still be for him a category. For the matrix of becoming, the matter of things, is not for him as for us Space-Time but only Space, and movement requires to account for it a category of motion.

Thus a motion in so far as it is a particular sort of motion is an empirical existent. In so far as it has the character of motion, that character is categorial. According to the sense in which the phrase 'a motion' is taken, it means a category or an empirical existent. Motion is thus the border-line between the categorial and the empirical region. Our discussion serves to point the truth that categories and empirical characters are not separated by a hard-and-fast distinction as Kant supposed. It is rather the distinction between what is pervasive in experience and what is variable and not pervasive. For empirical things are complexes of that very Space-Time of which the categories are the fundamental characters. Accordingly the categories can be and have been studied by the same so-called empirical or experiential method as empirical things are. To this point I shall return again.

Grades  
of the  
categories.

At the same time the discussion leads us further to a matter of great importance as well as difficulty, namely the relation of the categories to one another. There are grades of rank within them. Motion is more complex than all the rest and includes them. It communicates with all the others. A motion is a substance and exists and is in relation to other motions. We seem to have three grades within the categories. The major categories are the first four—existence, universality, relation, and order. These communicate with each other as has been seen. Existence is different from other existence. As universal a thing is of the same sort as other particulars and different from another sort of particulars. Relation

exists and has in turn universality, in the same sense as a thing is universal. The next group of categories—substance, quantity, number, etc.—communicate with each other and with the major group, but the major group do not communicate with them. Thus a substance is in a relation of causality with other substance, and it exists. But existence is not a substance, nor is relation necessarily causal, it may be a relation of number. Perhaps it might be urged that an existent is also a substance. Yes, but its bare existence, its mere occupation of Space and Time, is not equivalent to substantial occupation. A substance is universal, but a universal as such is not a substance. In fact that it is a substance is the error which underlies the notion of the 'concrete universal': when we treat a universal as a singular existent we are going beyond universality to substance.

Motion forms the last or third group of the categories. It presupposes the other categories and communicates with them. But they do not communicate with it. Even substance is not itself motion, though every *thing* besides being substance is motion. Substance represents motion only in respect of its persistent occupation of space through a lapse of time; but it does not include quantity, nor intensity, nor number. Whereas in motion the full tale of the fundamental determinations of Space-Time is told and motion is consequently the totality of what can be affirmed of every space-time.

Perhaps the above description may serve as a gloss upon Plato's conception of the communion of the greatest forms with one another; how vastly more important such intrinsic communication is than the mere overlapping of different universals in a thing which is say both man and black; and how distinct it is from the participation of a particular in its universal; while at the same time, when the universal is taken to be the plan of the particular spatio-temporal configuration which its particular is, we can see how the participation of the particular in the universal is illuminated by the intercommunion within the world of forms—as indeed is implied in Plato's own doctrine of the forms as the



union of the form of number with the indeterminate dyad.<sup>1</sup>

Besides these categories proper, we shall find that there is yet another group of characters belonging to empirical existents. They are relations arising out of the nature of Space-Time which subsist between existents, but they differ from the categories proper, in presuming that there are empirical things in existence. They concern the connection of empirical things with one another; and may perhaps be spoken of as derived or even empirical categories. These form the subject-matter of the following Book.

It should be added that in speaking of the minor categories of substance, number, etc., that is of the second order of categories as depending on 'relation' of their two elements of Space and Time to one another, I have used the term relation from the poverty of language. There is strictly speaking no relation between a time and a space, for relations subsist only between existents, and Space and Time are only provisionally separated features in Space-Time. But 'relation' having been used of existents is extended so as to cover any connection. The connection is not a relation but a given feature of any space-time and is only called a relation by analogy. Similarly though the qualities of a substance are related to each other in the strict sense, it is only by an extension of the term that substance is said to be 'related' to its qualities, or again, as we have seen before, a universal is said to be related to its particulars, as if the universal could exist by itself, whereas it is the particulars which are related to one another by the relation of identity of sort arising out of their plan.

Point-  
instants  
and  
infinities.

The categories apply obviously to all finites in the ordinary sense of that term; but they apply also to everything empirical, everything which is not the whole of Space-Time but a part of it. Thus they apply to what I have called empirical infinities, like the infinite numbers, or as we shall see later to the infinite deity, because these

<sup>1</sup> See before, ch. viii. p. 315.

are not the whole of Space-Time. However much an infinite number is conceptual, it is rooted in Space-Time like all numbers, and to that radical connection with the common matrix of becoming owes the reality which it possesses. But the empirical infinities offer less difficulty than the point-instants themselves. The categories have been illustrated from point-instants as well as from ordinary things or complexes of pure events. They exist, have universality, and substance, and the like. Even the categories of quantity and number belong to them and that of whole and parts, when point-instants are considered as limiting cases. They are empirical like the infinities, for each point-instant has its own individual character, is a 'this.' Yet since they are the elements of Space-Time which is the source of all categories, they illustrate that intimate connection of the non-empirical and the empirical which will be touched on less briefly in the following chapter. But they cannot be treated as finites, regarded as having a separate existence like ordinary finites. That would be to introduce the notion of the real self-subsistent infinitesimal; which is inadmissible. Point-instants are real but their separateness from one another is conceptual. They are in fact the elements of motion and in their reality are inseparable from the universe of motion; they are elements in a continuum. So far from being finites, they are the constituents which are arrived at as the result of infinite division and belong to the same order as the infinities. Consequently they must be regarded not as physical elements like the electrons, but as metaphysical elements, as being the elementary constituents of Space-Time or Motion. Real they are, but if the apparent contradiction may be pardoned, they are ideal realities. In any case they are not apprehended by us purely through sense, but with the aid of conception and by some other mental function yet to be discussed. I do not attempt to minimise the difficulties of this statement, which may I trust be removed or lessened as we proceed. My object here is only to point out that they and the empirical infinities alike are contained within the one original matrix

and share the characters which every portion of it possesses. There are empirical elements and empirical infinities, and both are empirical and both in their degree real and yet ideal. Thought if it is correct does not deprive its objects of reality. But reality makes room for ideal objects supposing them to be always in touch with Space-Time; and this both sets of exceptional cases are, the point-instants as constituents of Space-Time, the infinities as a special class of complexes within it.<sup>1</sup>

Quality not  
a category.

Our list of categories omits two notions which have pretensions to be accounted categories, quality and change, and the omission must be justified. I will begin with quality, for convenience, though change is so closely related to motion, that it would seem to have prior right. Quality is not a category but an empirical generalisation of the various specific qualities of things, or a collective name for them all. It is not open to me to say that there is no discoverable determination of Space-Time as such which is called quality, as there is one which is called quantity; for this would be begging the question. But it is open to me to ask, is there any pervasive determination of things on the strength of which we can say the thing has quality? for otherwise quality would not be a category of things. Now to this question the answer is that there is none. We know from experience that there are qualities—red, hard, fragrant, sweet, life—corresponding to certain sorts of spatio-temporal complex. But experience does not acquaint us with quality as such; as it does make us acquainted with quantity or substance as such. It is not relevant to point to what we have ourselves called the quality of motion, for this quality, empirical as it is, is the limit between the non-empirical and the empirical, where the two are indistinguishable. Were there no empirical qualities we should not need to speak of the motion-quality at all. Quality is to specific qualities as colour is to red, green, and blue. It is a collective name for them but not their universal. It

<sup>1</sup> The subject is returned to in Bk. IV. ch. i. *à propos* of the infinite qualified entity God.

may gravely be doubted whether there is any plan of colours which may be called colour, which is modified and specified in red, green, and blue as the plan of man is modified in European and Mongolian man. But even if this could be maintained in the case of colour, it cannot be held that there is any plan underlying red and hard and life which is modified into these specific qualities.

Contrast quality with quantity. Quantity as such is a real determination of things of which definite quantities are modifications or copies, which participate in the universal or plan. The same thing is true of the other categories. But it is not true of quality. It may be answered that everything possesses some quality or other, and therefore quality is categorial; everything is a complex of Space-Time and to complexity corresponds quality, it will be said, upon our own showing. But the objection does not hit the mark. Complexity in Space-Time makes everything a complex, but not a quality. It is specific sorts of complexes which are hard or sweet. Complexity as such is not a qualitative but a quantitative or purely spatio-temporal determination. Let us for the sake of definiteness revert to colours. The quality of the colour varies with the wave-length of the vibration. Now every colour has some wave-length or other. This is its universal determination as a complex of motion. But length of wave is a quantity and not a quality. When the length is definite there is colour. But length of wave as such has no colour as such. Or to revert to the general question irrespective of the illustration from colour: all portions of Space-Time are empirical complexes. But we may not therefore say that 'empirical complex' is a category. For being empirical is only a collective designation of empirical things. In so far as everything is empirical it is not categorial. There is no category of empiricity which pervades all empirical things. There are only empirical things. In the same way there are red and green and hard and sweet and life and mind; and these are qualities. But there is no universal, quality. Quality

is therefore not categorial but empirical. Kant himself though he regarded quality as a category could only use it in experience, could only schematise it, in the form of intensive quantity, which is as good as saying that as quality it was useless as a category. The truth is, it is not a category at all.

Change not  
a category.

There are two reasons why change cannot be regarded as a category. The first is that it is not pervasive for there may be persistence without change, as in the persistence of a quality, or, if the possibility of this be doubted, in the case of a uniform motion. But the more important reason is that change always involves empirical elements. It is a transition from one empirical determination to another. Primarily change is change of quality, and quality is always empirical. We may, it is true, also have change in quantity as in the velocity of a motion; or a change in direction. But even here it is a transition from one empirical determination of quantity to another. Now a category implies no empirical determination in the finites to which it applies. For instance, relation is a category and an empirical relation is between empirical existents, *e.g.* father and son. But the category relation does not depend on the empirical character of its terms but on their categorial character of existents. Change on the other hand implies in its nature that that from which the change takes place and that to which it proceeds are empirical.

Change is not mere difference; but the passage from something to something different. A change of quality is more than a difference of quality, it is a process from the old quality to the new. A change of mind, a mere change in my sensation, is experienced by me, or is felt, not as the possession of a different decision or a different sensation, but as the passage from the one mental state to the other. Remembering that all existents, no matter what qualities they possess, are in the end complexes of motion, we may describe change as a species of motion which replaces one set of motions by another; it is grounded in motion and may be described as a motion

from one motion to another. The nature of the transitional motion may be different in different cases. Thus one thought may lead on to another and the motion is experienced as a direct transition between the two thoughts. The first thought leads on to the different thought. But the motion of change may not be of this simple and direct kind. Causes at work in my mind may end in displacing one thought from its prominence or activity in my mind. When the pale skin blushes and changes in quality from white to red, there is no direct transition from the motions correlative to whiteness to the new set, but some cause is at work, some motion, which ends in the displacement of the white motions by the red. Where a motion changes in velocity or direction, it is at the instance of some cause or motion. In every case we have not a mere difference but a motion which ends in the substitution of one empirical condition for another.

Change is then not categorial but empirical, and it is an empirical variety of motion, which is still categorial. Accordingly I am unable to accept the doctrine of Mr. Bergson that change is the stuff of things. It can only be so regarded if change is a loose expression for motion. Thus Mr. Bergson writes: "there are changes but there are not things which change; change needs no support. There are movements, but not necessarily invariable objects which move; movement does not imply something which moves."<sup>1</sup> The second proposition is I think true, but not the first. But their juxtaposition as if they were saying the same thing appears to imply that change and movement are identified. This cannot, however, be maintained. Change is change of something else, though it is not necessarily change of anything that can be called a thing, like a material body. Movement is anterior to things which are complexes of movements, and it is quite true that that movement is a stuff of which things are made and is not a mere relation between things which already exist and are said to move. But while the same may be said of change with

<sup>1</sup> H. Bergson, *La Perception du changement* (Oxford, 1911), p. 24.

respect to certain things, change always implies movement and is movement from one movement to another. Change is an alteration in something else, viz. in movement. For Heraclitus, of whom Mr. Bergson is the modern representative, as for the other Ionians there was a stuff in which change occurred or which embodied change and it was fire. But bare change cannot take the place of fire. On the other hand bare motion or Space-Time can, and change is an empirical form of that stuff.<sup>1</sup>

The categories have no origin.

The categories then being the fundamental determinations of Space-Time are the pervasive features of the experienced world. According to our hypothesis things are complexes of Space-Time, and we have seen relations are spatio-temporal connections between them. Nothing therefore but exhibits categorial features; nothing therefore but obeys the principles in which these features reappear in the form of judgments. Everything has being and is a substance, every event has a cause, everything is related to something else, by way of quantity or causality or difference or otherwise. To the question whether there are privileged or *a priori* parts of experience, the answer therefore is that there are. To the question whether these privileged elements are due to mind or are in any peculiar way the contribution of mind, or imposed by mind on the objects of experience, the answer is that they are not. On the contrary the categories enter into mind as they enter into the constitution of everything else. The mind being a highly developed spatio-temporal complex, that is to say being in its simplest and ultimate expression such, is an existent, a substance, a cause, numerable, and its acts have intensity, and affect each other causally and reciprocally. To the question whether the *a priori* characters of the world are derived in some manner from experience of things or are primordial and ultimate, the answer is that they are primordial; they do

<sup>1</sup> Plato distinguishes motion into two sorts, translation or movement from place to place (*περιφορά*); and change or alteration, motion from state to state (*ἀλλοίωσις*). *Theaet.* p. 181b. See Burnet, *Gk. Phil.* Pt. i. p. 245. I am following Plato, though with differences.

not come into being otherwise than as all things come into being and because things come into being. All things come into being endowed with the categories and with all of them. They are the determinations of all things which arise within Space-Time, which is the matrix of things, "the nurse of becoming."

On this conception, the time-honoured controversy on the origin of *a priori* ideas and principles becomes superfluous, or, if that phrase may sound too harsh to be compatible with the reverence due to great names in philosophy and psychology, these ideas have their origin in Space-Time itself. The controversy owes its fascination to the intrusion of mind. The very use of the words, *a priori* ideas, suggests that these categories are not features of the world, the greatest kinds of beings as Plato called them, but mere mental objects, or perhaps devices or instruments for understanding experience. Accordingly, since the time of Kant, the debate has turned upon how we acquire these ideas, since there can hardly be a doubt that we have them. Kant is himself in some degree responsible for this result. We have seen that for him the categories are the binding cement of knowledge, whereby the mere empirical material of knowledge becomes in the proper sense experience. Not finding this binding substance in the empirical materials themselves he referred it to the mind, not to mind in its personal or empirical capacity as an experienced object, as something which is made up of psychical states or processes in the same way as a physical object is made up of physical material; but in its impersonal capacity as the subject of knowledge, which knowledge is not merely like an idea of Locke and his followers the possession of an individual but open to all minds. This, as I have said, was his method of expressing, and perhaps the only method open to him of expressing, the impersonality of knowledge, of real experience as distinct from the objects which may occur to you or me and not to another. But though he rightly saw that the empirical or variable element in experience was distinct from the *a priori* element, he did not see that what was



empirical was in fact in the same kind as the non-empirical, that it was in itself the modifications of the non-empirical. As he did not merely distinguish the two but separated them, the categories became an artificial tie between things in a different kind from them. No wonder that he seemed to think of the categories and of Space and Time as tools for working up empirical experience, a "machine-shop" in the trenchant but entirely misguided phrase of James. They were not so for him; but since their connection with the empirical material was referred to mind, it remained miraculous that causality or Space should be a part of experience itself as he was all the time insisting.

Kant's solution of the problem was not psychological, though it simulated that form. The problem has since become almost entirely psychological; have we *a priori* ideas, and how do we come by them? The attempts that have been made to answer the question have been psychologically unsuccessful, and metaphysically they have attained the failure to which, if our hypothesis be correct, they were foredoomed. For these ideas have no history, but lie at the basis of all history, whether history of the mind or of other things. They could not be derived from the experience which the individual has of empirical things. For how could we gather number, for instance, from things, if things were not already numerable? And if they are, our idea of number requires no history except possibly of how it comes to clearness in our minds.

Then biology came to the help of half-hearted empiricism. The individual could not within a life-time acquire from external things through co-ordinated experiences of touch (or sight) and movement the notion of Space. But the acquisitions of a life might be transmitted from father to child, and the accumulated experience of generations might suffice. Thus, while Space or number are *a posteriori* for the race, derived from the observation of empirical things, they would be *a priori* for the individual who inherits the results of centuries of past experience. The biology, legitimate at the time the theory was formulated, has since become more than suspect. But

even if it were correct, how could experiences which were not themselves spatial or numerical, no matter through how many generations they were inherited, come to feel or look like space or number?

To Spencer's experiment succeeded the brilliant hypothesis of William James, contained in the concluding chapter of his *Psychology*. Some of our experiences come to us through the front-door, by way of sense; some through the back-door, by way of our cerebral (and mental) disposition. We see yellow when a field of buttercups is presented to our eyes; but we also see yellow when we are dosed with the drug *santonin*. The categories and all *a priori* ideas come to us by this back-door method. By a fortunate variation a brain is born whose mind envisages the world causally or numerically, and being successful in its reactions to a world which is causal and numerical, its kind prevails and peoples the earth. The biology is above reproach, but the theory is as defective as Kant's and, ironically enough, its defects are much of the same sort. Unnecessary as psychology, it will not bear examination as metaphysics. It is assumed that I do not see causality or number in the empirical object. But if so the analogy of the yellow which we get either from the buttercup or from the optic centres dosed with the drug is unavailable. In the first place there is, so far as I am aware, no evidence that a person who had never seen yellow from the buttercup or other yellow objects would see yellow at all from *santonin*. If the brain had not already functioned so as to see what we call a yellow thing, would the stimulation of the optic centre from within suffice? This is a very reasonable doubt, which, however, is too much connected theoretically with a particular view of sensation to be dwelt on further at this stage. Let us, however, suppose it to be possible; how would it help? Let there be a mind which, when the optic centre is stimulated in a special way, whether from within or from without, sees yellow, and let it, not having seen a buttercup before, see a buttercup. It would see the shape of the buttercup and feel and smell the flower, and it would see yellow. But why should it

see the buttercup yellow? Why attach the yellowness it sees to the buttercup? Now the same question arises precisely with the *a priori* ideas. My brain when stimulated in a certain way thinks number or causality. But why does it attach number to this pile of shot, or causality to this murderer, if there is no number or causality written on the face of the empirical object? You will have front-door experience *and* back-door experience; but the problem to be solved is how the front-door perceptions come to be interpreted by the back-door ideas. If there are clues to guide the mind then the back-door ideas are not wanted. If there are none they are useless. Kant is avenged; the mind is a veritable machine-shop of *a priori* ideas with which it fashions outward experience; the accuser commits the very fault with which he unjustly charged the accused. And, over and above, the question remains which must not be answered here; could any habit of mental action, due to endowment of brain, give us apprehension of number or causality, apart from the causality it enjoys in itself, unless it has exercised that causal habit at the call of some external causality? The reservation contained in the words apart from its enjoyment of itself was not needed in the case of the yellow. For there the mind does not enjoy itself as yellow when the optic centre is drugged, but sees yellow in the same way as it sees a buttercup yellow.

The truth is, that no fortunate variation is needed to account for our envisaging the external world as causal and numerical. The brain and the mind themselves enjoy causality both internally in the relations of their processes and in their relation to things outside the brain or mind, and things outside are already causal and are so apprehended by the mind. The fortunate variations of brain or mind are not those which apprehend cause or number, for these belong to brain or mind as they belong to all things in space-time. The fortunate variations are those empirical ones, those special twists of talent or genius or sensibility, by which an individual discovers the law of gravitation or produces *Hamlet* or the Choral Symphony. We no more need a special gift for number than we need

a special gift for yellow. In the one case we need eyes; in the other case what we need is consciousness. Indeed, as we shall see more clearly hereafter, just because number and cause are categorial we do not need a special organ like eyes to apprehend them. We shall see that in contemplating causality outside itself the mind is aware in enjoyment of its own causality.

## CHAPTER X

### THE ONE AND THE MANY

The  
categories  
indefinable.

SPACE-TIME is thus the source of the categories, the non-empirical characters of existent things, which those things possess because of certain fundamental features of any piece of Space-Time. These fundamental features cannot be defined. For to define is to explain the nature of something in terms of other and in general simpler things, themselves existents. But there is nothing simpler than Space-Time, and nothing beside it to which it might be compared by way of agreement or contrast. They cannot even be described completely. For description, like definition, is effected by reference to existent entities. Not only all our language but all our conceptions are derived from existents, including in existents those of mathematics, particular figures or numbers. The utmost that we can do is therefore to describe in terms of what is itself the creation of Space-Time with its various features, and however little our description borrows from metaphor, it cannot but be a circuitous way of describing what is prior to the terms we use in our description and can therefore in the end only be indicated and known by acquaintance. Space-Time itself and all its features are revealed to us direct as red or sweet are. We attempt to describe what is only to be accepted as something given, which we may feel or apprehend; to describe, as has been said above, the indescribable. With each category in turn we have indicated the basis of it in Space-Time—the occupation of Space-Time, the continuity of it which lies at the base of relation, its uniformity or the constancy of its ‘curvature’ and the

like. But it is plain that these descriptions are merely the best means open to us of inducing the reader to look and accept what he sees. The descriptions do nothing more than take the place of pointing with the finger.

More than once this has been propounded with regard to continuity, or to the statement that Space-Time is a continuum. A series of existents, say real numbers, occurs under certain conditions and then becomes a continuum. But we are in stating these conditions approximating to the original and indescribable feature of Space-Time which makes continuity of things in series possible. This original continuity is known only by acquaintance. The same thing is true of the infinity of Space-Time, and the remarks made upon this topic in a previous chapter<sup>1</sup> need not be repeated. Of the categories the same thing is true. Our description of Space-Time itself and of the features which belong to any bit of it is but a means of reaching by thought to what is deeper and more fundamental than the products of thought. It is a method which redounds to the honour of Space-Time in the same sense as it redounded to the honour of Cornelia to be named as the mother of the Gracchi.

Kant was thus mistaken in the sharp distinction which he drew between the forms of Space and Time and the categories. If our hypothesis is correct, empirical things are in the end complexes within that pure manifold of intuition of which he sometimes speaks; and the categories belong to them because they are the fundamental features of Space-Time stuff. But there is a well-worn proposition familiar to idealists, and derived from Kant, that the source of the categories is not itself subject to the categories. This proposition is true. The categories applied for Kant to objects of experience, not to the mind which contributes them to experience. They apply in our conception of the matter to the empirical things which are special configurations in Space-Time and because they are such; but they do not apply to Space-Time itself. Space-Time does not exist but is itself the

Space-  
Time not  
subject to  
the cate-  
gories.

<sup>1</sup> Bk. I. ch. i. p. 40.

totality of all that exists. Existence belongs to that which occupies a space-time. There is a perennial question which is stilled by no assertion of its futility, how the world came to exist or what made the world? We can see at once the answer to the question, and how far it is futile. The world which is Space-Time never and nowhere came into existence, for the infinite becoming cannot begin to become. It could only do so in a larger Space and Time and at the order of some cause exterior to it. Now all existence arises within Space-Time, and there is no cause which is not itself a part of it. Nor can we say that it has some neutral kind of being, some being for thought. For thought or thinking, on our hypothesis that mind and things may be treated on the same footing with proper regard for their empirical difference, is an existent within Space-Time, and to say that anything has being for thought means only that it can be the object of thinking. The being of the world if it had such neutral being cannot be being for its own creature. Space-Time therefore does not exist but it is existence itself, taken in the whole. The question is thus not so much futile as it needs enlightenment. Space-Time exists only in the loose usage of words in virtue of which we have to say it is in Space and Time rather than out of them—a matter to which we shall recur.

Space-Time is not universal; for there is no plan of it distinct from the execution. Its only plan is to be Space-Time. Were it universal it must be repeated or at least capable of repetition. But how should the whole of Space-Time be repeated? For if it could be, it would not be the whole. It is not, as we have attempted to show at length, a relation, nor even a system of relations, but it is through and through relational in the sense that in virtue of its continuity there are relations between its parts and the relations are themselves spatio-temporal. Perhaps it is not necessary to run through the whole list of categories to be assured that the father of them is not also their child. But two of them seem to lay special claim to be applicable to Space-Time, the category of substance and that of whole and part with its related

category of number. Is not Space-Time a whole, and a one which includes many, and a substance? In each case we must answer, no.

It is not a whole of parts, for a whole of parts is constituted by its parts, and is relative to other wholes of parts. Whereas Space-Time breaks up into parts and wholes of them as it lives and moves. It is true a rock may disintegrate into powder and still remain an aggregate or whole; but the whole is given to begin with. If Space-Time were such a whole it would be given all at once. But being Time (or indeed Space, which is the same thing) it is not, as Mr. Bergson rightly says, given altogether. To suppose so is to ignore the reality of Time, to fail to take Time seriously. At any one moment the universe is the whole of its existent parts, but at any one moment the universe is not the whole universe of parts. For in the redistribution of dates among places, new existents are generated within the one Space-Time. It may indeed be called not a whole of parts, but the whole or system of all existents. But this designation does but help us, by reference to the category of whole and parts, to feel towards the infinitude of Space-Time. In like manner Space-Time is in no case a unity of many things; it is not a one. For that implies that it can descend into the field of number, and be merely an individual, and be compared as one with two or three. The universe is neither one in this sense, nor many. Accordingly it can only be described not as one and still less as a one, but as *the* one; and only then because the quasi-numerical adjective serves once more to designate not its number but its infinite singularity; or, as is more clearly still expressed by calling it substance, that it is not so much an individual or a singular as the one and only matrix of generation, to which no rival is possible because rivalry itself is fashioned within the same matrix.

It is not a substance, and only by a metaphor or analogy can it be called the infinite substance. For substance is an existent configuration of space in so far



as it is the theatre of Time; it is a space with definite contour occupied by time, that is, is a space enduring in time. But infinite Space has no contours and is thus no substance. We are tempted still to call it substance because a complex substance like man is a grouping within its contour of many different substances, and we imagine Space-Time to be an extension of such a complex substance. In doing so we are forgetting that a substance however complex is related (by causality) to other substances and no such relation is possible for Space-Time as a whole. It may still be urged, substance is the occurrence of a space in time or the extension of time over a space, and infinite Space and Time are in the same relation to one another. But it is really only when you cut a finite<sup>1</sup> space out of the whole, or a finite time out of the whole, that it is possible in strictness to speak of a relation between the space and time of a substance. You can think of them apart from one another just because the time of which you speak is that part of a larger Time which is appropriated to the space in question, or because that part of Space is appropriated to the time in question. Infinite Space and infinite Time are one and the same thing, and cannot in reality be considered apart from one another. This statement is wholly independent of the question whether a finite space may not be sustained in its configuration through infinite time; whether there may not be substances which having come into existence endure for ever; which is entirely an empirical question to be settled by evidence.

When we attempt to extend the notion of substance to infinite Space-Time, we are in fact once more merely helping ourselves towards a statement of its infinite character, and the whole value of the attempt lies therein, and not in the use of the conception of substance. We are describing the infinite Space-Time as the substance which includes all substances and is the system of them. But the idea of infinity is prior to that of an infinite system of existents, which is really derived from it. We approximate to infinity by the notion of an infinite

<sup>1</sup> Or any space less than the whole.

system of existents, like numbers or substances, which is our conceptual reconstruction, by means of the blocks, of the quarry from which the stones were hewn. The infinite Space-Time is the totality of all substances, but it is prior to the substances by whose composition it is described. Thus to call it the one or the whole or the infinite substance is no more than to aim at its infinitude, in terms of the finite creatures of it. Only in this sense is it legitimate therefore to speak of the infinite substance.

In truth, infinite Space-Time is not the substance of substances, but it is the stuff of substances. No word is more appropriate to it than the ancient one of *hyle* (ὕλη). Just as a roll of cloth is the stuff of which coats are made but is not itself a coat, so Space-Time is the stuff of which all things, whether as substances or under any category, are made. If I call it the stuff and not the material, it is to avoid confusion with the very much more specific idea of matter, as matter is commonly understood. Matter is a finite complex of space-time with the material quality, as we shall afterwards see. The substance of the great writers of the seventeenth century is different from this stuff. It is the highest expression of the universe and not like Space-Time the universe in its lowest expression. Substance so understood is not mere persistence of Space in Time but means that which is absolutely self-contained and is the cause of itself. The stuff of the world is indeed self-contained in that there is nothing not included in it. But it is not the supreme individual or person or spirit, but rather that in which supreme individuality or personality is engendered, as we shall have to note in the sequel. Nor can it intelligibly be called the cause of itself. For causation is the more intimate relation between existent substances. To think of the world as causing itself is to imagine the world at one moment generating itself at the next moment, and splits the life of the world into independent moments which can no more account for causal relation than a motion can be explained as the succession of separate point-instants.

Space-Time as the stuff of things.

Thus Space-Time, the universe in its primordial form, is the stuff out of which all existents are made. It is Space-Time with the characters which we have found it to reveal to experience. But it has no 'quality' save that of being spatio-temporal or motion. All the wealth of qualities which makes things precious to us belongs to existents which grow within it, and which are in the first instance characterised by the categories. It is greater than all existent finites or infinities because it is their parent. But it has not as Space-Time their wealth of qualities, and being elementary is so far less than they are. Hence it repels two possible kinds of misdescription. It is first something positive. Not being subject to the categories it might be supposed to be entirely negative, not relation nor substance nor quantity nor number, not in time nor in space. It is in fact something very positive to which these determinations and all the qualities which depend on them owe their being. The other misconception is far more serious. Because it is not describable by categories the universe might be supposed to have characters or qualities superior to them. Thus Space-Time is not in space or time as though there were some enveloping Space or Time. It is itself the whole of spaces and times, as it is all existence, and all substance. But it must not therefore be supposed to be spaceless or timeless, out of Space or Time and to possess spacelessness or timelessness (eternity) as some superior qualities which confer upon it a unique character. All its characters are reflected in its children. Call it by what name you will, universe or God or the One, it is not above Space or Time. It is truer to use the careless expression, the universe is in Space and Time, than to describe it as timeless. Space and Time are, in the words of Spinoza, though not with the significance which he attaches to the phrase, attributes of the universe or Space-Time. In what sense there is divinity in the universe, we shall not attempt to understand till much later in our inquiry. Nor are we free to call it timeless or spaceless in order to separate it from the Time which is measured by the clock or the Space which is measured by the footrule.

There is only one Space and one Time, and though the mathematicians may deal with it by methods different from those of philosophy and common sense, it is still the same Space and Time which they all investigate each in its different way. It is such a misconception which has given rise to the notion of eternity as something different from Time and superior to it. But the only eternity which can be construed in terms of experience is infinite Time. If it is different from this it is out of all relation to Time, and if attributed to the world requires justification on its merits, and not because it may be thought to derive its nature from contrast with the alleged defects of ordinary empirical and mathematical Time. Space-Time therefore is neither in Time nor in Space ; but it *is* Time and it *is* Space.

Two topics now claim discussion which arise out of the relation of the whole Space-Time to its existents, and the questions so raised are answered from the same consideration, that the existents are of the same stuff as the whole. One is the ancient subject of the relation of the One and the Many. The other, which I will take first, is the distinction of the categorial and the empirical, the use of which must have already been the source of some difficulty in the course of the exposition. The nature of the distinction has been explained, but it must have seemed at times a shifting or evanescent one. I do not so much propose to ask again what is the distinction as to recapitulate the cases in which categorial and empirical seem to grade into each other. The categorial is the pervasive, and the empirical is the variable or contingent. But since categories are the fundamental features of, and space-time and empirical existents are variable complexes within, Space-Time, the boundaries of the categorial and the empirical are from the nature of the case hard to draw, and may seem indistinct and fluid. The *a priori* and the empirical are distinguished within experience itself. Both are experiential or in a general sense empirical. The strictly empirical is only the non-pervasive parts of experience, all experience being ultimately expressible in terms of Space-Time.

Categorial  
and  
empirical.

Strictly speaking, the empirical coincides with that which has quality. But we are compelled to recognise mere spatio-temporality as, in a sense, a quality, though it is in itself categorial. It is the meeting-point of the categorial and the empirical. Motion is categorial and is allied with the other categories which it sums up. But it is allied, on the other hand, in virtue of its unitary character with the series of obviously empirical qualities, red, sweet, life, consciousness. Hence it is that the various special determinations of the categories, of number, quantity, motion, are described in common philosophical language as primary qualities. To call spatio-temporality quality is little more than a name, but it illustrates the essential identity of stuff between the categorial and the empirical.

Once more the various geometrical figures are described as empirical, and the various numbers of arithmetic, including not only the ordinary integers but infinite numbers and surds. Number itself is categorial and so is Space. But the numbers and different figures in space are not pervasive but empirical. And yet we might be seeming to deal with categorial matter in treating these subjects. The distinction here is not so difficult to draw. It becomes much more difficult when we call point-instants themselves empirical,<sup>1</sup> though they are the very constituents of Space-Time, which is *a priori*, and the source of all that is *a priori*.

Another symptom of the intimacy of categorial and empirical was the difficulty experienced in respect of certain notions in determining whether they were categorial or not. Change being a relation of empirical terms could be assigned to the empirical, without much hesitation. But likeness and such thoughts as 'and' and 'but' and 'if' might easily be taken for categories of a derived order. 'Like' we decided to be empirical because it implied the overlapping of different universals in the same thing, and such overlapping is empirical and does not follow from the nature of Space-Time itself, but only from the fact that it breaks up into

<sup>1</sup> See above, ch. ix. pp. 324 ff.

complexes, and these complexes may exhibit the overlapping of empirical universals.<sup>1</sup> 'And' means combination and 'but' disjunction or obstruction between empirical data, but they are empirical relations and arise from the empirical character of their terms, when they are not purely extrinsic. Such notions as these, however categorial they may appear, lack the note of pervasiveness, and the reason of this is that they are not fundamental to any space-time as such.

Such difficulties in the working out of the distinction of categorial and empirical serve only to accentuate the intrinsic solidarity of the two. The whole empirical world may be described as, in its simplest terms, a multi-form determination under various circumstances of categorial characters. If the variable and the pervasive are alike Space-Time, this conclusion is natural. Any empirical thing is a configuration of space-time, when the thing is expressed in its simplest terms. And all categories are configurations of space-time. The only difference is in pervasiveness of the categorial as distinct from the empirical determinations. I am a fairly definite configuration of space-time; but I possess universality in so far as, being a man, my pattern is repeated elsewhere. In that respect I possess a character which everything shares with me. My empirical universal, the pattern of man, is shared with me only by other men. But all my empirical characters are specifications under my empirical conditions of categorial ones.

We come finally to the relation of the One to the Many? We are not asking yet what the One is, nor asserting anything other than that it is Space-Time; nor whether the elementary point-instants are monads like those of Leibniz or whether the complexes of them are governed by a dominating monad. These topics are not yet in place. Our question is whether the existents within Space-Time, being only crystals within that matrix, are lost in the reality of Space-Time or conserve their own. This question too has been already answered in

<sup>1</sup> See above, ch. iv. pp. 247 ff.

The One  
and the  
Many.

part by anticipation under the head of relation. For it is clear that Space-Time takes for us the place of what is called the Absolute in idealistic systems. It is an experiential absolute. All finites being complexes of space-time are incomplete. They are not the sum of reality. But their absorption into the One does not destroy their relative reality.<sup>1</sup> That could happen only if the real in which they are absorbed were of a different stuff from themselves. But to be a complex of space-time is to be of the stuff of which the universe consists. Now a configuration of motion is not destroyed by its relation to the circumambient medium but is, on the contrary, sustained thereby. It is the surrounding space from which the triangle is cut off which secures it its existence as a triangle. The society or State which is composed of individual men as citizens does not destroy the reality of its members as citizens but sustains it. Thus things being reducible in the end to these complex groupings of motions have such reality as falls to their share. They may be brief as the lightning in the collied night. They may be annihilated in the shock of motions within the domain of Space-Time, they may enter into new complexes and take on fresh empirical qualities, there may be ceaseless variation from the interplay of things; or a thing may persist through appreciable durations, undergoing redistribution of motions and changing its qualities in correlation therewith, waxing and waning in bulk, even varying in shape and texture and yet preserving its substantial individuality, as when a man is mutilated by war or disease; or it may persist eternally except for violence as the germ-plasm is said to do. My body (for I say nothing at present of my mind) dies and is resolved, like the rock, into its elements. There is here but a replacement of one kind of empirical reality by another. All these empirical variations take place within Space-Time and are changing configurations of it, and each of

<sup>1</sup> In the general conception of the relation of the parts to the whole of experience (which here appears as part of a systematic doctrine) I have been chiefly stimulated by Mr. Stout's metaphysical writings (in the *Proceedings of the Aristotelian Society*).

them being of Space-Time shares in the reality which belongs to its matrix. The difficulty is therefore not to be sure that a thing or a state of a thing or an event which happens to it really is but to know what it truly is. To discover this is the object of science. And owing to the imperfection of our minds which makes exact qualitative observation unattainable and the difficulties to be studied hereafter which stand in the way of exact apprehension of spatio-temporal figures of things, this object may be one to which we can only approach, but not attain.

Consider Space-Time, or indeed the universe however conceived, as lifted above its parts (or appearances as they then are called), as something from which they represent a fall and degeneration; and the parts are unreal ultimately because of their finitude. Let it be the stuff or medium in which things are cultivated, and things of all kinds suffer from their finitude only in their incompleteness. They are not the whole reality but they are real in themselves, and it is only our imperfection as finites which conceals from us partially their true nature; how that is they are delimited against each other in Space-Time. Within this matrix there may then be progressive types not so much of reality as of merit or perfection, as a rose may be a more perfect thing than a stone. There is room for an ascending scale of such perfection. But everything that truly is is really. The One is the system of the Many in which they are conserved not the vortex in which they are engulfed.

END OF VOL. I



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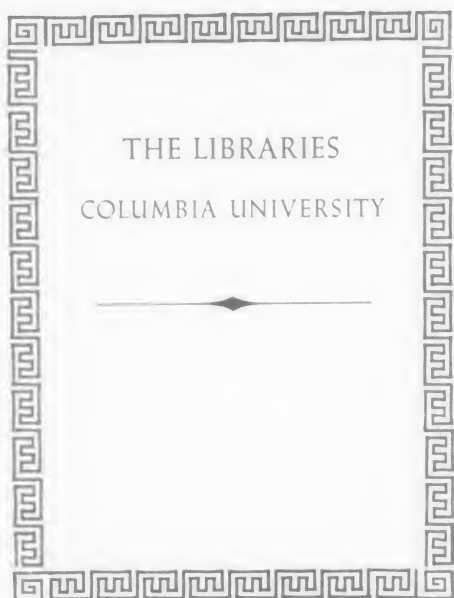
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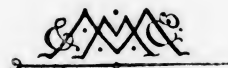


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BOOK III  
THE ORDER AND PROBLEMS OF  
EMPIRICAL EXISTENCE

## CHAPTER I

### THE CLUE TO QUALITY

#### A. MIND AND ITS NEURAL BASIS

EMPIRICAL things are complexes of space-time with their qualities ; and it is now my duty to attempt to show how the different orders of empirical existence are related to each other, and in particular to explain more precisely the nature of qualities which hitherto have merely been described as being correlative with their underlying motions, the exact nature of this relation having been left over for further consideration. To do this is the second and perhaps the more difficult of the two problems assigned to metaphysics in the Introduction. The first was to describe the fundamental or *a priori* elements of experience. The second was to explain what empirical existence is and to indicate those relations among empirical existences which arise out of the *a priori* features of all existence, if any such can be discovered. In making this attempt I am met by a particular difficulty. My principal object is to ask whether minds do not fall into their appropriate place in the scale of empirical existence, and to establish that they do. It would be most convincing if minds were first mentioned in their place at the end of the scale. But this procedure would compel me to use conceptions which would remain difficult until their application to minds was reached. Moreover, the nature of mind and its relation to body is a simpler problem in itself than the relation of lower qualities of existence to their inferior basis ; and for myself it has afforded the clue to the interpretation of the lower levels of existence.

Introductory.



I shall therefore adopt a method of exposition (not of demonstration) which partakes of compromise, and shall preface the inquiry with two problems as to mind, the solution of which can be used as a clue and a means of simplification. The one problem is the relation of mind to the living organism with which, or with a part of which, it is correlated. The other is the relation of minds to one another. I shall then be able to state a hypothesis as to Space-Time and the kinds of empirical existence,—matter, life, mind, to name the most obvious distinctions,—which arise within the one Space-Time.

Identity of  
mental  
with its  
neural  
process.

Mind is at once the case which most urgently forces on our attention the problem of quality and at the same time offers the readiest means for its solution. For our mind is experienced by us as a set of connected processes which have the character of being mental, possessing the quality of 'mentality,' or as I shall most frequently say, the character of consciousness. Whether there is any department of mind, which, remaining mind, may be said to be unconscious, and in what sense this is true, is a question I shall defer for the present. Any one who wishes can substitute for the quality of consciousness the quality of being mind, and can, if he pleases, continue to think of mentality as something less specified than consciousness. A mind, then, is for immediate experience a thing or organisation of processes with this distinctive property of being mind, and, however much interrupted it may be, it is normally linked up by memory in its various forms. Under consciousness I include without further ado those vague and indistinct mental processes on the extreme margin of consciousness which are sometimes described as subconscious, such as, in general, the tone of the organic sensations when we are occupied with external events. Such then is mind as we experience it. But we experience also our bodies, and, moreover, in the organic and motor sensations, such as hunger and breathing and the like, we experience our bodies as alive, while they are also experienced by touch and sight, etc., as being physical things of the order of external things. And, as

we have seen in a previous chapter, experience leads us on to connect our mental processes with our body, and in particular with our central nervous system, and more specifically still with a certain part of our brain, and to localise our mental processes in the same places and times<sup>1</sup> as certain neural processes. We thus become aware, partly by experience, partly by reflection, that a process with the distinctive quality of mind or consciousness is in the same place and time with a neural process, that is, with a highly differentiated and complex process of our living body. We are forced, therefore, to go beyond the mere correlation of the mental with these neural processes and to identify them. There is but one process which, being of a specific complexity, has the quality of consciousness; the term complexity being used to include not merely complexity in structure or constitution of the various motions engaged, but also intensity, and above all unimpeded outlet, that is, connection with the other processes or structures with which the process in question is organised. For failure in intensity may mean failure of an otherwise sufficiently complex process to be conscious, and so may any cause which disconnects it from the rest of the neural processes which in their connection give us mind. Correlation is therefore an inadequate and misleading word to describe the relation of the mental to the corresponding neural process, and is only used provisionally so long as the two are separated from one another. In truth, according to our conception, they are not two but one. That which as experienced from the inside or enjoyed is a conscious process, is as experienced from the outside or contemplated a neural one. When we speak of them separately it is that we consider the same process first in respect of the character which allies it with simpler vital processes, and second in respect of the new quality which emerges at this higher stage of vital complexity. It has then to be accepted as an empirical fact that a neural process of a certain level of development possesses the quality of consciousness and is thereby a mental process; and,

<sup>1</sup> For the qualifications as to position in Time see vol. i. pp. 130 ff.

alternately, a mental process is *also* a vital one of a certain order.

Conscious-  
ness some-  
thing new  
in life.

Now it is not the character of being vital that gives the mental process its individuality, but its new quality of mentality or consciousness. Let us take as examples of vitality such operations as digestion or breathing or secretion. There is no reason that I know for not reckoning with them physiological reflex action or any neural process not attended with consciousness or mind. But while mental process is *also* neural, it is not *merely* neural, and therefore *also* not merely vital. For, that mind should emerge, there is required a constellation of neural or other vital conditions not found in vital actions which are not mental. To use the word which Mill has made familiar, mind requires, as a fact of experience, a collocation of conditions which constitutes something new. What that collocation is, might be very difficult for any one but a physiologist to say, and perhaps not possible completely for him. I take it that in the main what determines the difference of the psychical from the merely physiological process is its locality in the nervous system, implying as this does the special structure of the living nervous elements in that locality. It may still be open for discussion at what level in the brain-structure consciousness is found, whether it may attend processes in some of the higher ganglia or whether it belongs exclusively to the cerebral cortex, or whether, again, it is not different if it belongs to a lower and a higher level in the cortex itself. But assuming that the conception of localisation of mental functions in specific regions of the brain is physiologically correct,<sup>1</sup> we may safely regard locality of the mental process as what chiefly makes it mental as distinct from merely neural, or what distinguishes the different sorts of mental processes from one another. This is, however, a subsidiary matter for our purposes.

<sup>1</sup> Always of course with the proviso alluded to before (Bk. I. ch. iii. vol. i. p. 108), that the localisation of functions in a part of the brain does not mean that only that part of the brain is concerned in subserving the function, but only that it is the part principally so concerned.

What counts is, that without the specific physiological or vital constellation there is no mind. All less complex vital constellations remain purely vital. Thus not all vital processes are mental. There is not, or not necessarily, to each neurosis a corresponding psychosis. The equivalent proposition is, that while all psychoses are neuroses, the psychoses imply the emergence of a new feature, that of mind. It would follow that mental process may be expressible completely in physiological terms but is not *merely* physiological but *also* mental. Its resolution into physiological terms may be infinitely difficult, and even if it can be performed it remains that the statement of these conditions only means mental action because we are already acquainted with the fact of their mentality. To put the matter in different terms: suppose we regard the description of mind as a chapter of physiology; it would still be the physiology of mental action; we should still be attending to this kind of physiological constellation because it is the basis of mind, and should be directed to it from psychology. Nor, as we shall see later, could any physiological knowledge of the physiological constellation implied in a mental action enable us to predict that it would have the mental quality.

Mental process is therefore something new, a fresh creation, which, despite the possibility of resolving it into physiological terms, means the presence of so specific a physiological constitution as to separate it from simpler vital processes. I do not mean, to take a particular and interesting case, that the foresight of ends as distinguished from mere vital purposiveness, is not *also* vital. Every idea of an end to be gained, every thought of a universal, or of a combination to be made executive by some invention, I shall assume to be *also* a physiological process. I mean that such processes though they may be reduced to the class of vital processes are so distinct from the remainder of the class that they hold a privileged position in it. Precisely in the same way the king is a man and belongs to the same class with his subjects. But he is not one of his subjects. Abt Vogler in Browning's poem declares of the musician

"that out of three sounds he frames not a fourth sound but a star." Out of certain physiological conditions nature has framed a new quality mind, which is therefore not itself physiological though it lives and moves and has its being in physiological conditions. Hence it is that there can be and is an independent science of psychology, and that the translation of mental processes into their physiological counterparts follows the lead of the more primary description of mind. Mind is thus at once new and old. No physiological constellation explains for us why it should be mind. But at the same time, being thus new, mind is through its physiological character continuous with the neural processes which are not mental. It is not something distinct and broken off from them, but it has its roots or foundations in all the rest of the nervous system. It is in this sense that mind and mental process are vital but not merely vital.

Conscious-  
ness not an  
epiphenomenon.

Hence it follows that we are entitled summarily to dismiss the conception that mind is but an inert accompaniment of neural process, a kind of aura which surrounds that process but plays no effective part of its own: the doctrine that mind is an epiphenomenon of nervous process, which nervous process would continue to work equally well if mind were absent. The doctrine is not simply to be rejected because it supposes something to exist in nature which has nothing to do, no purpose to serve, a species of *noblesse* which depends on the work of its inferiors, but is kept for show and might as well, and undoubtedly would in time be abolished. It is to be rejected because it is false to empirical facts. The mental state is the epiphenomenon of the neural process. But of what neural process? Of its own neural process. But that process possesses the mental character, and there is no evidence to show that it would possess its specific neural character if it were not also mental. On the contrary, we find that neural processes which are not mental are not of the same neural order as those which are. A neural process does not cease to be mental and remain in all respects the same neural

process as before. Even if it remains in the same place, its connection with the rest of the brain is in some way disturbed, and it cannot proceed freely on its course. The neural process which carries thought becomes changed into a different one when it ceases to carry thought. All the available evidence of fact leads to the conclusion that the mental element is essential to the neural process which it is said to accompany by way of embellishment, and is not accidental to it, nor it in turn indifferent to the mental feature. Epiphenomenalism is a mere fallacy of observation.<sup>1</sup>

It is otherwise with the other well-known doctrines of the relation of body and mind. The statement which has been given above is by no means new in principle nor for that matter in its particular form. It is a species of the identity doctrine of mind and body, maintaining that there are not two processes, one neural, the other mental, but one. We shall do well to deal shortly with these other doctrines, not in order to treat the subject with thoroughness but to defend it sufficiently for our objects against the rival conceptions, or at least to exhibit the contrast between it and these conceptions.

No parallelism of neural and mental processes.

The mental process and its neural process are one and the same existence, not two existences. As mental, it is in my language enjoyed by the experient; as neural it is contemplated by an outsider or may be contemplated in thought by the experient himself. There can therefore be no parallelism between the series of mental and the series of neural or physiological events, such as is postulated by the strict theory of so-called psychophysical parallelism. That theory was devised to give expression to the complete disparity of the merely physiological and the mental, and the reason for it disappears so soon as it is

<sup>1</sup> Mr. Bosanquet has an admirable sentence (*Value and Destiny of the Individual*, London, 1913, p. 3) summing up the results of his previous treatment of the subject (Lect. v.) in his preceding volume. "It seems to me that the fertile point of view lies in taking some neuroses—not all—as only complete in themselves by passing into a degree of psychosis." See also the rest of the paragraph, which is too long to quote, where it is however taken for granted that the activity of mind is non-spatial.



recognised that what corresponds to the mental is not merely physiological but the bearer of a new quality. It solved or evaded the problem by regarding the mental series as entirely independent of the neural and yet in precise correspondence therewith. The difficulties of establishing such precise correspondence in detail may be neglected here, and they are probably not insuperable. But it is evident (as Mr. Ward convincingly pointed out<sup>1</sup>) that an exact correspondence of two completely disconnected series, which do not influence each other, is no more than a restatement of the problem. The only solution it offers is that the problem must be left unsolved. It could therefore at most be accepted for psychological purposes as a compendious statement of the fact that every psychosis has its corresponding neurosis. There still remains the metaphysical question whether the mind whose processes are mental is not a being which interacts with the brain, or whether, as I have urged, the mind is not itself identical with the totality of certain neural processes as they are enjoyed.

But even as a psychological convenience, the theory is without justification and superfluous, and moreover false in what it suggests. Psychology is concerned with a parallelism between the mental series and another series of a different order, the series of physical objects of which the mental processes are aware. One of the drawbacks of the order of exposition I am adopting is that I must take for granted what will only be fully clear hereafter (though it has been formulated provisionally in the Introduction), that the object of the mind in any mental process is something non-mental, which is contemplated, while the mental process is enjoyed. To each non-mental object (and there is no mental process which is without its non-mental object, even if it be only a *sensum* which is the object of sensing, even if it be only the internal condition of the percipient's body as in organic sensation) there corresponds a mental process which has the quality of conscious awareness. As the

<sup>1</sup> *Naturalism and Agnosticism*, Pt. iii. Lect. xi. (vol. ii. 1st ed., London, 1899).

object varies, so does the neural process or the mental process vary. But there is no parallelism of the neural and the mental series of which psychology should take account. They are one. Psychology considers the series from the point of view of the experient or enjoyer; physiology from the point of view of the onlooker, or, if of the experient himself, not in his character of experiencing the mental process but of reflecting on its basis in neural process.

I can only account for the admission of a metaphysical miracle as a convenient psychological fiction, by supposing that mental processes were believed to have not merely the quality of consciousness, but other qualities disguised under the name of 'content' which varied with the object. If the sensory object blue or the image of a table is in some way contained in the apprehension of it, doubtless there is an unbridged chasm between the neural process which clearly has no such 'content' and the mental process which has. No one has indeed imagined that a mental process was itself blue or tabular. Yet these processes are supposed to be qualified correspondingly, or at least to have before them presentations or ideas which are not themselves merely external or a selection from what is external. The lingering tradition of representationism provides a mental process (hence called a mental state) with a mental object. But once we recognise that mental processes have no character, beyond the quality of being mental, other than such as all processes present, intensity or locality or velocity and the like, that is to say, empirical forms of categorial characters, all reason is removed for supposing the mental process to be a different existent from the neural one. That neural process differs with every difference in the object which stimulates it to activity, or upon which it is directed. The neurosis of green occurs for instance in a different place from that of sweet. The neuroses all possess the vital quality but are different configurations of categorial characters. In like manner the psychoses present, corresponding to the qualities of the object, differences in the process-features of the psychosis; but there is nothing to indicate the



difference of quality of the object but these process-features. The separation of the mental process from the neural one is therefore superfluous, for it is the same process-features which are in the one case enjoyed and in the other contemplated. Ultimately this separation depends upon failing to recognise the distinctness of the mental process from its non-mental object. It is therefore not only superfluous but founded in error.

Causality  
between  
mind and  
brain.

If we do not regard the mind as the connected totality of its mental processes and therefore identical with the totality of the physiological processes of which they are the presence in enjoyment, the only alternative is some form of animism; which conceives the mind as an independent entity which acts upon, or is acted upon by, the brain, or operates through it as the instrument of mind. On our view it still remains true that mind and brain interact if the phrase is properly interpreted. Just as we continue to speak of sunrise and sunset, though it is the earth that revolves, so we may continue to say *under a certain proviso* that the mind, as in an act of will, acts upon the brain directly and produces indirectly movements of the limbs; or that a stimulus excites the mind through the brain and sets going a train of thought. The proviso under which such language is permissible is that no brain process shall be understood to cause its corresponding mental process and no mental process its corresponding brain process. Let large letters denote the psychical and small ones the neural series. What we have then in fact is a series, *Aa, Bb, Cc*, etc., where some of the small letters may have no corresponding large letter at all. Now *A* does not cause *a* but is identical with it; but *A* being also *a* may cause the next member of the series *b*, and if *b* is equivalent to *B*, *A* causes also *B*. Strictly speaking, the effect of *A* is *B* and of *a*, *b*. But in so far as *A* does not exist without *a*, *A* also causes *b*. And where some of the steps in the causal chain as in willing are purely neural, *A* causes them because it is itself a neural process *a*. In like manner no sensory neural process *a* causes the corresponding sensing *A*, for it actually *is* that process; but in

so far as it is identical with *A* it may be said to cause the next psychical event *B*. In this way we may legitimately say that my determination to strike a man causes the blow of my fist; or that a piece of yellow makes me think of an orange tree in a garden on the Palatine Hill. Just because mind is also vital it can act on my body, and because some neural results of stimulation are also mental, my brain may act upon my mind. There is therefore causality between the members of the mental series and between those of the physical series, and because of the identity of the mental with its physical correspondent there is causality in the sense defined between members of the two series.

Needless to say, it is not such interaction of mind with brain which is implied in the notion of animism. Animism. The mind is there distinct from the neural series. But the reasons which have been thought more recently to compel the adoption of animism have, more particularly in the impressive statement of Mr. McDougall,<sup>1</sup> been coloured by antagonism to the notion of psychophysical parallelism. The argument has also assumed, or seemed to assume, the alternative to animism to be the so-called associationist conception of mind, according to which mind consists of a number of separate events corresponding to separate objects linked together by associative connections. There are sensations or ideas grouped together into wholes by contiguity or similarity. To this correspond on the neural side certain central excitements which are connected by association-fibres. This crude psychology, obsolescent in this country since the article 'Psychology' of the ninth edition of the *Encyclopædia Britannica*, may fairly be regarded now as obsolete. Mental processes are not grouped into wholes by association but are distinguishable processes within a mental continuum. The agglutinative conception of mind is replaced by the organic one. Mind has its structure and constitution as an animal body has. Moreover, as we have seen, the life of mind is essentially one of

<sup>1</sup> *Body and Mind*, London, 1911, chs. xix.-xxii.

transition, and substantive processes of mind like perceptions or images are but the more stable processes corresponding to things in the object world which stand out in the stream, while the transitive ones are the vaguer, but still definite processes, which correspond to the relations among the objects. Now, when the notion of psychophysical parallelism is rejected in its natural form and the assumptions of associationism are dismissed, the arguments in favour of animism lose half their persuasiveness. It will be as well to substantiate this proposition by indicating the considerations which on our hypothesis of identity modify these arguments. I am able to be shorter on this subject because much of what I have to say has been already said by Mr. Lloyd Morgan in the concluding chapter of his work on *Instinct and Experience*.<sup>1</sup>

The argument is that mind has certain specific characters to which there is or even can be no neural counterpart. It is not enough to say that there is no mechanical counterpart, for the neural structure is not mechanical but physiological and has life. Mind is, according to our interpretation of the facts, an 'emergent'<sup>2</sup> from life, and life an emergent from a lower physico-chemical level of existence. It may well be that, as some think, life itself implies some independent entity and is indeed only mind in a lower form. But this is a different question, which does not concern us yet. If life is mind, and is a non-physical entity, arguments derived from the conscious features of mind are at best only corroborative, and it is an inconvenience in these discussions that the two sets of arguments are sometimes combined. Accordingly I may neglect such considerations as the selectiveness of mind which it shares with all vital structures. These considerations really obscure the issue. For even if life is an entity of a different order from existences on the

<sup>1</sup> *Instinct and Experience*, London, 1912.

<sup>2</sup> I use the word 'emergent' after the example of Mr. Lloyd Morgan. It serves to mark the novelty which mind possesses, while mind still remains equivalent to a certain neural constellation. Consequently, it contrasts with the notion that mind is a mere 'resultant' of something lower. The word is used by G. H. Lewes (*Problems of Life and Mind*, vol. ii. p. 412), as Mr. Lloyd Morgan reminds me.

purely physical level, it would still be a question whether mind is not so distinct from life as to claim to be a yet higher order of existence. Let us then confine ourselves at present to mind in its character of a conscious being. The important question is whether it must be conceived as discontinuous with the neural structure or (if the phrase be preferred) the neural mechanism.

'Meaning,' it is said, has no neural counterpart, but the use of meaning is the very life-blood of mind. Now it is important here to distinguish two senses of meaning, because the argument for animism has been used by different writers in the two senses. I may mean in the first place an object, as when I point with my finger to a person and say, I mean you. Meaning here signifies reference to an object, and in this sense every conscious process means or refers to an object other than the mental process itself. All mental action implies the relation of a subject to an object; and it makes no difference whether the object is a perceived one present to the senses; or an ideal one like a purpose consciously entertained, such as going to London as entertained in idea or in thought; or even an imaginary object such as  $\sqrt{-1}$ . What neural (or as it is sometimes irrelevantly asked what mechanical) equivalent can there be for this unique relation? This sense of meaning corresponds to what the logicians call the meaning of a word in extension. On the other hand, meaning may signify what the logician calls intension; a word is used with a meaning; a flower may mean for me a person who is fond of it; "there's pansies, that's for thoughts"; and in general our minds may have a sensory object before them, but what we mean by it is a thought which has no sensory embodiment. In the words, "when I say religion, I mean the religion of the Church of England as by law established," these two senses of the word meaning seem to be combined, but on the whole it is mainly in the second sense that the word is used.

Now meaning in extension raises a quite different problem from meaning in intension; and that problem is not the question of the relation of mind to its alleged neural basis. It is the question whether the relation of

(1) The argument from meaning.

the conscious subject to an object which transcends it is unique, or whether it is not, as I shall maintain, found wherever two finites are compresent with each other. It is the problem of what is involved in the knowledge of what is not-mental. To be conscious of an object, to mean it, or to refer to it, may turn out in the end to be nothing but the fact that, to take a particular case, a table excites in my mind a conscious process of perceiving it. Accordingly in this sense of meaning, meaning does not belong here but to a later stage of our inquiry. Nor do I think that it would have seemed relevant were not the neural structure taken as alleged to be mechanical. For if it is a vital structure there is surely nothing very far-fetched in thinking that the stomata of leaves mean something beyond themselves, the air, to which they are adapted. I may then neglect meaning in the extensive sense for the present. (See later, pp. 89 ff.)

The other sense of meaning is undoubtedly relevant, and it offers real difficulty. For meaning is a conscious condition of mind. When I use a word, the meaning is in my mind (and of course besides this *refers to* something not in my mind). What then is meaning? Any part of a complex whole means for me the rest of the complex. A word, for instance, has been intimately connected with the characters of the things it names, and it means those characters. That is what it is to use a word with a meaning. My perception of the word means my thought of what the word stands for. The sight of the orange means for me the feel of it; the sight of the marble means its coldness. The knight on the chess-board means the moves which I may make with that piece. The symbol  $\sqrt{-1}$  means its mathematical interpretation. Now what is there in meaning so described which prevents us from believing that the conscious meaning corresponds to or, as I should say, is identical with a certain neural process? Doubtless if we imagine that our mind is made up of sensations connected together by mere indifferent lines of association, the solution is impossible. But if mental life is mental processes arranged in various complicated patterns, why should not a word set going in my brain,

and also in my mind, that pattern of process which we call the meaning? I have answered the question in anticipation when I pointed to the existence of imageless thought, customs of mind which may also be customs in the neural structure, not mere neural statical dispositions, but those neural exercises of a habit which are identical with the consciousness of a thought without its necessary embodiment in sense. When the exercise of the habit is more specific and detailed we may have the meaning turn into an illustration or concrete embodiment of the meaning, as when the word horse not only makes me think of horse but of the particular foal whose affection I attach to myself in the country by the offer of sugar. And when the marble looks cold the very essence of the condition of my mind is that the sight process is qualified by the ideal touch process, and the transition from the one to the other is in my mind. Even bare association of the orange with Sicily is more than the fact that I think of Sicily when I see an orange. Orange and Sicily are woven into a complex, of comparatively loose texture indeed as compared with the relation of cold to white in the marble, but still a texture in which the transition from the orange to Sicily is felt as a transition, and not as a mere juxtaposition. When I use a word like 'government,' a whole complicated neuro-psychical pattern is set going in my mind and brain, which is transitive and elusive, but none the less conscious, and only called transitive because it is wanting in definite detail. I may go on to fill out this transitive outline with the pictures of the coalition ministry. But it is still the elusive complex which stands out as the main occupation of my mind. The figures of the ministers are the fringes of it, not it the fringe of them. Thus mental connections to which correspond neural connections are as much conscious as what they connect, and meaning remains a unitary whole, while it still possesses its neural counterpart.

If meaning is thus neural as well as mental, it follows that a very slight change in an object, or stimulus, may produce an overwhelming difference in the mental response if that change is charged with meaning. The



famous telegram argument for animism loses therefore all its force. A telegram 'our son is dead' may find the recipient sympathetic but calm. Alter the word 'our' to 'your,' a trifling change in the stimulus, and the recipient may be overcome with grief. On the other hand, change all the words into French, a large change in the stimulus, and the effect on the recipient is the same as when the telegram was in English. The facts present no difficulty in view of the constitution of the recipient's mind. The little change of a letter makes an enormous change in the meaning of the telegram. But the words mean the same in French as in English. No conclusion in favour of a mind independent of the neural process can be drawn unless we are prepared to say that a spark should physically produce the same effect when it falls on a sheet of iron as when it falls upon a mass of gunpowder, or that a red ball will not cause the same bruise when it hits my body as if it were painted white.

(2) The argument from fusion.

Very different and far weightier are the considerations drawn from the phenomena of so-called fusion, that is to say where two stimuli which would singly produce their corresponding sensations produce, when acting together, a sensation different from either. It is thought that where this occurs there must somewhere in the neural mechanism be compounding of the physical effects: that there can be no compounding of mental states.<sup>1</sup> But in some cases at any rate there is said to be no such physical arrangement forthcoming. The subject is a technical one, and I cannot hope, nor am I fully able, to discuss it as it deserves. I desire only to remove a prejudice. It will be best to take a single case, that of so-called binocular fusion. Let the two eyes look at a disc or spot of light, the one eye through a blue the other through a red glass. Sometimes we see a disc of purple, but sometimes we see alternately either blue alone or red alone, in virtue of retinal competition. The possibility of this competition is taken to mean that the two stimuli are conveyed to different

<sup>1</sup> The words of W. James (*Psychology*, vol. i. p. 158) are 'self-compounding of mental facts is inadmissible.'

places in the brain and do not compound their effects physically. And yet in spite of this we can see purple on occasion. There is thus an action of the mind in the sensation of purple which has no correspondent in the brain. There is unity in the consciousness without unity in the cerebral neural structure which carries the separate sensations. Many other such facts are described by Mr. McDougall in his chapter on the unity of consciousness, in particular those of 'binocular flicker.'<sup>1</sup> Mr. Sherrington sums up his account of his experiments on this subject in the striking sentence: "Pure conjunction in time without necessarily cerebral conjunction in space lies at the root of the solution of the problem of the unity of mind."<sup>2</sup>

Now I confess that if a mental state is also neural in the sense I have assumed, it is difficult to understand how the mental states corresponding to the two stimuli can affect each other if there is not physical connection between them somewhere. But in the first place inhibition between them, as in competition, seems to require some communication between the neural processes which the stimuli set up. In the next place, though there may be no connection between the sensory centres of the two eyes yet the efferent process from each eye is determined from both, as is indicated by the motor reactions of the two eyes.<sup>3</sup> Mr. McDougall adds that

<sup>1</sup> I quote Mr. McDougall's account of these phenomena or some of them, and his inference from them. "If the retina is stimulated intermittently, the rate of succession of the stimuli may be increased until the subject ceases to perceive any intermittence or flicker of the sensation. This rate of succession is known as flicker-point; it varies with the intensity of the stimulating light; but we may take for illustration a case in which flicker-point is reached when the stimulus is repeated twenty times a second. Now if each retina is stimulated intermittently twenty times a second, but in such a way that the stimuli fall alternately on the two retinæ, the flicker-point is not changed; whereas, if the fibres from corresponding points converge to a common centre, flicker-point should be reached when the stimulus falls ten times a second on each retina; for then the centre would still be stimulated twenty times a second" (p. 292). My concern is not with this inference itself but with the further inference to which it leads of the necessity of an intervening soul.

<sup>2</sup> C. S. Sherrington, *The Integrative Action of the Nervous System* (London, 1911), p. 384.

<sup>3</sup> Sherrington, *loc. cit.* pp. 384 ff.



the sensations are localised in the same external place and connects the "identical motor tendencies" of corresponding points with Lotze's doctrine that "local signature of the visual sensation is bound up with, or is a function of, the motor tendency excited by stimulation of that point."<sup>1</sup> Whatever value may attach to Lotze's doctrine, it is at any rate of the greatest importance to note that the sensations in question belong to ('are referred to' or 'projected to,' are the ordinary, very questionable, phrases) the same external place. Now as long as there is physical connection somewhere, it is not necessary that the connection should be sensory or cerebral and be a conscious one as it is in the associative connections which were mentioned above. The significance of this will be apparent presently when we come to speak of the unity of consciousness.

Even then, it will be asked, how in the absence of composition of the two processes can there be a fusion of the two colours into a new colour purple? Must this not at least be attributed to the mind apart from its cerebral instrument? The question seems to presume the same misconception (or at least the same contradiction of my conception) which, as I have suggested, leads to the notion of a complete separation, of mere parallelism, of the psychical and the neural series. The assumption seems to be that the two mental processes, sensing blue and red, have blue and red for their 'content' or are qualified by those colours; and in that case it is impossible to understand how the mental sensation of purple with its different content could arise in the absence of some new neural process resulting from the separate neural processes of blue and red. No wonder the fusion is then attributed to the mind itself. But if mental process is without quality or content save the quality of consciousness and corresponds to its object blue, or red, or what not, in virtue of its locality or the other spatio-temporal characters mentioned before, a different answer is possible and intelligible without difficulty.

<sup>1</sup> W. McDougall, *Brain*, vol. xxiii., "On the Relations between Corresponding Points of the Two Retinae" (p. 380).

Granted the union somewhere of the neural processes of blue and red, even if the union be only at a common efferent path, we should say that these neural arrangements were the neural arrangements, carrying consciousness, which are correlated with the object purple, and that under these circumstances we were conscious of purple. There is no common sensory centre, let us admit, for the different excitements of the corresponding points in the two eyes. This is the arrangement, neural or mental, for seeing purple, when the purple is seen by both eyes in the same place.<sup>1</sup> There is another neural arrangement, in that case, for seeing purple when both red and blue stimulate the one eye alone. Yet there is no occasion to postulate an interfering soul. The alternatives are not between having a common centre for the two eyes, and assuming something which combines the two sensations into a different one. Both alternatives presuppose subtly that the quality of sensations belongs to the mind and a different one if not produced by external action in a brain centre must be manufactured by the mind. But there is a third alternative.<sup>2</sup> If we distinguish the sensing from the sensum, and hold that the sensum is in the external thing, then all our business is to note the difference in the neural machinery of response (carrying with it the quality not of the sensum but of consciousness) in the binocular instance. The brain centres being through the binocular arrangement affected neurally in the manner appropriate to purple, the mind 'sees purple'. The "specific synergy," to use a phrase of Prof. C. Stumpf, is supplied neurally, though not by direct sensory connection, and the mind sees the object to which that specific synergy is the appropriately corresponding neural arrangement. What would need explanation is not so much why the

<sup>1</sup> There is of course no purple thing present. But neither is there when a disc of red and blue sectors is revolved before the single eye. For the presence of the object when the appropriate nervous arrangement is given, see later, ch. iv. A, p. 85.

<sup>2</sup> This alternative has been suggested in the Introduction, and remains to be justified. (See later, chs. iv. v.)

mind sees purple under such conditions, but rather why under certain other conditions it sees only either one or other of the component colours. From this point of view there seems to me to be, in a sense not perhaps the same as his, a profound importance in the sentence I have quoted from Mr. Sherrington above. Two simultaneous processes in the mind, not necessarily connected at the conscious level, may form a single act of consciousness with an object different from that of either of the two mental processes taken singly.

The case of binocular flicker is a different one from the seeing of purple. The physical object is an intermittent illumination. The question is when the mind fails to detect the intermittence; and it appears that in general the result is the same whether the stimulation is binocular or monocular. From Mr. Sherrington's experiments it appears that there is a difference when the rate of intermittence is different in the two sets of stimulations; but here the objective difference of the *sensa* affects the sensibility for detection of intermittence. In these experiments also the sensations belong to the same place, and this is intimately connected with the common issue of the reaction from the visual centres.

Unity of  
conscious-  
ness.

This leads us directly to the problem of the unity of consciousness: how there can be such unity if the neural counterparts of the mental processes are not, as it is fairly clear is not always the case, united by connecting processes at the level of consciousness. This is one of two problems upon which our statement of the facts may perhaps throw light. The other problem is that of rupture of the unity of consciousness in spite of the existence of neural paths at the conscious level. If, as I have suggested, mental process is also neural there is no discontinuity (I mean disconnection) between those neural processes and processes occurring at lower levels of the nervous system or even of the organism taken as a whole. A conscious neural process may consequently be replaced (I purposely use a vague word to cover all cases) by a lower neural process which is not attended by conscious-

ness. Nor is it enough to urge that possibly there may be discontinuity in the neural structure itself, for at the bottom of this neural structure there lies, as at the bottom of all finite existences, the indefeasible continuity of its space-time; and the problem is but deferred to an earlier stage in the history of things.

Let us consider first the unity of consciousness. The case of fusion just discussed is enough to show that there may be unity of mind though the component processes are not connected at the conscious level. A still more obvious case is the unity of two experiences which do not fuse and are entirely disparate, such as a vision of trees and the touch of the chair on which I sit. These are disconnected experiences, but they are felt to belong to the one mind. Yet their nervous counterparts, though united by no definite neural connection at the conscious level, so long as they are not noticed to occur together, are part of one neural structure and are physically not disconnected at some level or other. Though these are united in time they are also connected somewhere in the neural space. Similarly there are gaps in time as that of dreamless sleep, where there is no consciousness in the ordinary interpretation of that word,<sup>1</sup> but where through some form of memory the interrupted history of our minds is united across the void. Our memory does not fill up this void but unites, to borrow the phrase once more, the broken edges of our mental life on the two sides of the gap. Thus the problem of mental unity assumes a different character. It is not how there can be mental unity without complete physical unification by lines of conscious connection, but how there can be unity in enjoyment when enjoyments are discontinuous though the neural structure as a whole is continuous. There is enough and to spare somewhere in the neural structure, to provide for everything in the mental life. The puzzle arises from the fact that while all psychoses are neuroses not all neuroses are psychoses. Hume, as I have so often pointed out, used the fact that the intermediate stages of

<sup>1</sup> If there is no really dreamless sleep, and no forgetting, the question disappears.

a volition are not conscious but purely neural to controvert the notion that causality is a mental experience. We have, in other words, to account not so much for the apparent absence of neural connections as for the presence of mental unity though there are neural connections, but not direct mental ones. The fact of mental unity is beyond dispute. Our minds are normally unitary, and no matter how disconnected our experiences may be they are not experienced as merely juxtaposed to make a unity, but as differentiations of that unity. This is the initial and central fact of our mental life expressed by the somewhat loose phrase that the mind is sensibly or to experience continuous.

Now it is just because the neural structure is (at least relatively) continuous, so that all its parts are physically connected, that there can be unity between divided processes of consciousness, so as to make them belong to one mind. In other words, because conscious processes are parts of a larger whole which is not all of it conscious, in spite of the absence of conscious connections there is still connection.<sup>1</sup> This would be sufficient for our purposes, for it turns the flank of the contrary plea that for want of evidence of conscious connection we must assume an independent mind. Still the problem remains of how to understand the fact of experienced mental unity. Unity of substance, we have seen, means belonging to one contour of space-time. The unity of mind should be the unity of one enjoyed space-time. Yet though the mind is aware of its past stages as connected with the present ones, and though at any moment its various experiences belong to the one enjoyed space of the mind, there are gaps in time and gaps in space as it enjoys them, and we know, moreover, that there are such gaps. There are not gaps,

<sup>1</sup> We have here a particular case of the general question of how a substance may have different affections which are not themselves directly causally connected. Their connection may lie lower down in the intrinsically simultaneous structure of the thing. They appear consequently to be merely juxtaposed, but they are in the end connected. (See Bk. II. ch. vi. A, vol. i. pp. 276 ff., and Bk. I. ch. iv. vol. i. pp. 135 ff., on mental juxtaposition.)

as we have seen, in the physical basis taken as part of a larger neural structure. How then are we aware of these gaps in our enjoyment, and so enjoy our mental unity?

The answer cannot be given till we come to learn how Space and Time themselves are apprehended. Various experiences palliate the difficulty but do not remove it. Sometimes we can by memory fill up the intervening time, going over the events between now and an hour ago. We cannot always do so, and never for the interval filled by dreamless sleep. Nor if we could, would the intervals of our memories be completely filled. From the reports of others we learn (as Leibniz observes) that we have continued to exist in sleep and can think of ourselves as existing in the interval, because we in turn have observed others to live in sleep, while from their reports they have not been conscious of the interval. Such experiences supplement but do not provide the direct consciousness we have of a mental unity containing gaps which we enjoy, though these gaps in our mental space and time are unfilled by mental events. In the external world two events of different date and place are observed as connected by a stretch of time or space however much foreshortened. These conditions are not presented in enjoyment. We must leave the problem for the present at this point, to resume it later.<sup>1</sup> It is enough to have shown what it really is, and that it offers no support to animism but rather, however difficult of solution, it in fact admits no solution at all unless mind is identical with some physical counterpart and is connected by some physical connections which need not necessarily be themselves mental ones, carrying the mental quality.

The second of these problems, that of divided consciousness and of the unconscious, presents great difficulties to the psychologist and requires expert knowledge of special cases for adequate discussion. All that I can hope to do here, or need to do, is to indicate on

Divided  
conscious-  
ness and  
the un-  
conscious.

<sup>1</sup> Below, ch. vi. pp. 150 f.

what lines a solution might be sought in accordance with the view of identity between the conscious process and its neural correlate; with the additional principle that such neural counterparts of mental processes are parts of a larger neural structure. The question of divided personality is more manageable than that of the unconscious. Whether the personalities alternate or coexist, it would seem that the normal personality, that is the total consciousness, is 'dissociated'; and it is not difficult to suppose that normal lines of connection between processes which are normally continuous, are for some reason barred or broken. In this way groups of mental processes with their neural basis are formed which have no complete connection with one another; though they may and do in certain cases overlap, each for instance using the common speech apparatus. They are comparable to those systematised groups of mental processes which constitute interests, when in persons of normal condition these interests are exercised almost in independence of each other, the week-day mind and the Sunday mind which in many persons seem to have so little to do with each other. Suppose the separation of these interests to become absolute; each interest would then constitute a separate personality of a limited kind. So in the body politic there are groups which almost ignore each other, and have different standards of feeling and conduct. Such separate personalities are called by a happy term 'co-conscious,' for in their case there is no good evidence to doubt that the split-off group really possesses a consciousness of its own, and the one person may treat the other very much as one normal person treats another with whom he has no such bodily alliance. That these co-conscious personalities mean the blocking of normal physical paths of communication (generally no doubt at the conscious level, as where there is actual loss of memory for tracts of a life), but possibly also at lower levels, is indicated by the process of restoration, where that occurs, of the original unity. Such restoration may assume a much more consciously deliberate shape than it probably possesses. Thus in the famous case of 'Miss

Beauchamp' and her demon Sally,<sup>1</sup> the ingenious physician persuades the demon to abdicate in favour of the rightful possessor of the body. This act of resignation on the part of the demon, who is by no means a good demon, but selfish and somewhat malignant, probably is only a pictorial representation of the fact that the blocked lines of association belonging to the original personality are becoming permeable once more.<sup>2</sup>

Now where the original unity breaks up into two persons, A and B, and where A, as sometimes occurs, does not happen to be aware of B as a foreign person, A is unconscious of B, but inquiry shows that B is itself a consciousness. A's unconscious turns out to possess a consciousness of its own. But it by no means follows that we may extend this precedent and assume, wherever what is unconscious can under certain conditions emerge into consciousness, that therefore the unconscious condition was all the while mental. We are here dealing not necessarily with pathological minds, but with the commonest facts of the normal mind. Thus incidents completely forgotten may at some time swim into memory, but must we assume that these processes were all the while preserved, not indeed as conscious but as an unconscious department of the mental? Dreams, as is now well known, may be an expression of tendencies in the dreamer's mind which cannot be expressed overtly, but which subsequent analysis of the person's mind shows to have been there somehow preserved and seeking expression in the person. Evidence of this sort has become so abundant and has been marshalled with so much skill by Dr. Freud that to many it would seem natural to disregard the scientific scruples of those who in the face of such facts still question whether a truly

<sup>1</sup> Dr. Morton Prince's famous case, in *The Dissociation of a Personality* (New York, 1906).

<sup>2</sup> Divided personality then seems to be perfectly explicable on the identity statement. On the other hand, it is difficult to see a reason why, for certain pathological causes, there should be two independent souls controlling parts of one organism, and certainly why in the case of a cure the two souls should become one. How does animism conceive the splitting of a soul or the fusion of two souls?



unconscious state is ever mental, is ever, that is to say, more than a neural condition which may under appropriate circumstances lead to a conscious condition, and because this is so, may justly be called psycho-physical without being psychical. The other view leads to the conception of a larger mind of which the conscious mental states are but the appearance, somewhat in the fashion of a thing-in-itself, embodied no doubt in the neural structure, out of whose mysterious depths mental conditions emerge into the light of day. One may be very sensible of the enormous value for pure psychology (for I am not concerned with the therapeutic side of the matter) of Mr. Freud's discoveries without necessarily pledging oneself to belief in the existence of an unconscious mind.<sup>1</sup>

On the contrary, with the identity interpretation of the relation of mind and neurosis, a mental process may leave its traces in a neural form which is purely physiological. A memory may remain latent as a physiological trace or disposition, awaiting the touch of an appropriate stimulation to take on the full vividness, and complexity of a conscious memory. At what level an experience is preserved it may not be easy to say. Possibly at the highest level; but possibly also a conscious process may be registered in a lower level of the vital structure which subserves the mind. On the view that mental processes are also vital and therefore connected with the rest of the vital nervous structure, this proposition presents no difficulty. Thus we may have neural dispositions at lower levels than the conscious level, which may at any time be completed neurally and so call into play the action of the higher level. They would thus form a permanent undercurrent of the mental life, but would remain purely physiological till called upon to enter into the psychical neural constellation. For this reason they may be termed psycho-physical to indicate their essential continuity with what is psychical, but there is some risk that the expression may be misunderstood to imply the presence of a psychical factor. I prefer to speak of

<sup>1</sup> See for Mr. Freud's hypothesis the last chapter of *Traumdeutung* (Leipzig and Vienna, 1909, ed. 2), esp. p. 380.

physiological dispositions, which are in themselves not psychical but may emerge into consciousness. Thus it would seem better to distinguish what are strictly mental dispositions, that is conscious plans, from dispositions secondarily acquired, automatic habits, which may remain entirely below the level of consciousness. With this explanation we can understand how a mental, that is a neural process at a certain level, may either become so lacking in intensity or so much disconnected with other processes as no longer to carry with it consciousness or may be replaced by and registered in a subjacent part of the structure; and at the same time how owing to their continuity with the mental level such purely physiological conditions affect the course of the mental life and on occasion enter into it. Just so, at an even extremer remove from the mental life, the state of the nutrition, though it may not be psychically perceptible, may affect the working of the mind. Instead then of the mythological or at least hypothetical larger mind of which the conscious mind is only a part or an appearance, we should have a very palpable and unhypothetical neural system (itself a part of the whole organism) of which the workings of a particular part correspond to and in fact are consciousness, and *any* part of which may affect consciousness or may register the traces of past experiences.

Hence, to take an instance or two from a field whose details are matter for the specialist, it does not follow that because analysis after the event discloses the presence of a feeling in a dreamer's mind which disguised itself in the "manifest content" of the dream, that that feeling was present in a mental form. The physiological tendency may have been enough, for example the stirring of some organic process contained within an emotional condition. In psycho-analysis the inhibition is removed which prevented the tendency from coming to the surface in its natural form. It may well happen that ideas, for instance of decorum, set going by the physiological stirring of a tendency reputed immodest, may give a different turn to the tendency. From this point of view the machinery of the "censorship" exercised over the

unconscious wish may be only a mythological or pictorial way of representing something very real which is going on in some part of the neural structure, but does not imply that all of it is mental. In the same way in negative hallucinations where a patient is told not to see cards with odd numbers of pips, though it is evident he must distinguish odd cards from even ones in order to notice only the even ones, it does not follow that he sees the card with odd pips and then suppresses the perception; the visual stimulus may be suppressed or inhibited by his instructions before it reaches the mental level of development.

It is by no means asserted that, where there is 'unconsciousness' which can be seen to be conscious under certain conditions, it is really purely physiological. On the contrary, it may be co-conscious. I am only pleading that we must choose between the conscious (which includes subconsciousness in the sense that word sometimes and perhaps most conveniently bears of what is in consciousness but indistinctly separable from the mass of mental experience) and what is not mental at all but purely physiological though it remains continuous with the mental and may affect the mental. The truly unconscious is not mental at all, though continuous with it; if it is mental it is co-conscious. It is only for the expert to say when there is co-consciousness and when there is not. Accordingly, on the statement here adopted I find myself in agreement with a passage of Dr. Morton Prince,<sup>1</sup> which I will conclude this subject by quoting: "We can say at once that considering the complexity and multiformity of psycho-physiological phenomena, there would seem to be no *a priori* reason why all subconscious phenomena must be the same in respect of being either co-conscious or unconscious; some may be the one and some the other. It is plainly a matter of interpretation of the facts and there still exists some difference of opinion." By unconscious processes the writer means processes which are wholly unconscious, that is, are purely physiological.

<sup>1</sup> *The Unconscious* (New York, 1914), p. 161.

## B. THE APPREHENSION OF OTHER MINDS

Another topic which I discuss here, out of its proper place, but for convenience in exposition, is how we come to recognise each other as conscious subjects. In a previous chapter I was at pains to show that our belief in the intimate connection of mind with brain was founded on direct experience; though that experience was helped out by reflection, as all our experience is; the issue of such reflection upon experienced data, some of them enjoyed, some contemplated, has been to identify the mental process with a certain constellation of physiological processes. I shall now try to indicate what the experience is on the strength of which we believe in other minds than our own. For without some direct experience of other minds such recognition does not occur. The existence of other minds is commonly regarded as an inference by analogy from the outward behaviour of other persons' bodies. Their gestures, actions, and speech in various circumstances resemble our own in those circumstances, and we regard them, it is said, as proceeding from a consciousness like our own. Now it is true that when we already have the notion of other minds, we interpret outward behaviour on the analogy of our own experience, and can thus sympathetically enter into their minds in all manners of refined and subtle interpretation. But in the first place the doctrine in question cannot apply from the nature of the case to unreflective animals, such as dogs, who certainly appear in some of their behaviour to recognise other dogs as of the same kind as themselves.

And in the next place it is flatly at variance with the history of our minds. It implies that we begin with a knowledge of ourselves and construe foreign selves in that likeness. Now it is almost a commonplace that the reverse is rather the case, that our reflective consciousness of ourselves arises in and through our consciousness of

Acquired  
not by  
analogy but  
direct ex-  
perience.

others. We are led, not of course to the enjoyment of ourselves but to noticing ourselves, through intercourse with others: the knowledge of ourselves and that of others grow up together. Our own individuality stands out for us against a background of other persons. Were we alone in a non-conscious world, we should enjoy ourselves and feel success and disappointment, but we should hardly experience ourselves as individual persons. But what is more important, mere inference by analogy cannot account for our original recognition of other minds. For the idea of a foreign consciousness, unless directly supplied by some experience to that effect, is something to which we have no clue in ourselves. We enjoy our own consciousness and our own consciousness only, and we do not contemplate it, but only our bodies. The idea of a consciousness not our own belonging to the body of some one else would be a sheer invention on our part. How should we invent such a conception of something totally new, if foreign consciousness were not in some manner revealed to us as such?<sup>1</sup> For it is safe to assert that we never invent in that sense, but only discover, though we may combine the materials we already know in all sorts of new combinations. We have then to search for the experience which assures us not inferentially but directly of other minds.

The experience is of sociality.

That experience is a very simple and familiar one, the experience of sociality, and has a double aspect. Our fellow human beings excite in us the social or gregarious instinct, and to feel socially towards another being is to be assured that it is something like ourselves. We do not first apprehend that another being is a mind and then respond to him, whether positively as in affection or negatively as in aversion; but in our tenderness or dislike we are aware of him as like ourselves. Just as the emotion of fear or the instinct to run away from

<sup>1</sup> Compare A. E. Taylor, *Elements of Metaphysics* (London, 1903), p. 205, for a clear statement of how inadequate the notion of inference by analogy is to account for our having the idea of a foreign self. Bk. III. ch. ii. § 3 of his book gives his version of the case.

certain things discovers them to be dangerous, the cognitive apprehension being given to us only in so far as we practise a certain response, so in seeking the company, or avoiding it, of our fellows we are aware of them as like ourselves. But while without the social instinct we should not be led to this apprehension, we do not experience the satisfaction of the instinct of sociality till we have the experience that the creature towards which we act socially reciprocates our action, either by co-operation or rivalry. The emotion of sociality is a double-sided one; it is a response on our part to the other being, confirmed by a response on his part to us. The double experience is necessary to sociality; it takes two persons to make friends or two persons to make a quarrel. Without the instinctive response we should seek nothing from the other; without the co-operation we should not be aware of him in the fullest sense as our fellow.<sup>1</sup>

Instances upon this merely instinctive level are the experiences of parental or filial affection, or sexual love, competition in pursuit of prey, or jealousy. We do not merely feel ourselves performing certain actions towards another but we want him, and in turn we find him playing his part in the joint experience in which we are both concerned. Without this reciprocation, our instinctive action would not have its peculiar flavour. Our social feeling towards him is the divination that he is like ourselves; his reciprocation confirms it and makes

<sup>1</sup> The prior importance of the social instinct was omitted in my account of the matter in *Mind*, xxii. N.S., 1913, "Collective willing and truth," § 2, pp. 17 ff., which therefore was open to the objection that the resistance of a table to my pressure was a response to my action. The importance of the other element can be recognised by reflection on the similar problem, which will occupy us later, of how we come to have assurance of the existence of God. There too God stands for something in the Universe which we find responding to our religious sentiment or desire (below, pp. 373 ff.).

Mr. Laird (*Problems of the Self*, London, 1917, p. 25) appears to miss my point when he urges that it is because a human hand behaves differently from a stuffed hand that the doctrine I am contending against explains the difference by another consciousness like our own. The idea of a foreign consciousness would be miraculous if it were not based on a direct experience of it.

it assurance. Thus we feel tenderly to a child as we should not feel towards a soft warm cushion (the illustration is from W. James). But we do not feel socially towards him, the tenderness has not its distinctive flavour, except for the reciprocation of the child. It is felt more plainly towards an affectionate than towards a cold child, and felt more and differently towards a child than towards a puppy. It may be questioned whether we should feel tenderness to a fly in distress if we had not already acquired tenderness in respect of living creatures which can reciprocate. There is, to take a different example, all the difference between grasping a hand which returns the pressure and grasping an unresponsive piece of flesh in the shape of a hand. It seems to us inhuman and disappoints our expectation of a return, and we wonder whether we are not shaking hands with a fish or a statue. To have the warm human experience we require reciprocation. Again, rivalry for the possession of food is a different experience from appetite for the food; it contains the experience of jealousy or hate. Or again, if the rival is inanimate and cannot participate with us; when for instance a cigar which I am smoking goes out I may be disappointed, but if it is knocked out of my mouth by a person I am angry. When the dog's bone rolls away from him he grasps it more firmly; but if another dog or a man seizes it, he growls. The experience of another man's trying to get the same thing as yourself is a different experience from mere obstruction or difficulty in obtaining the object, and is the suggestion that he too wants it. It is of course true that when the experience of real rivalry has become familiar the obstructing inanimate agent may also be credited with consciousness; and the dog may be angry if his bone slips or the man if his cigar goes out, or he may, like Sir Walter Scott, say that a letter which he cannot find has been hidden by the Devil. But he must have experienced rivalry to begin with. Once more, the feeling of love to the opposite sex is not the same when the love is not reciprocated, and accordingly love is different from mere selfish lust though even the mere animal satisfaction

implies too complementary action of the other party.<sup>1</sup> A lover may of course feel genuine love when it is not returned, but his expectation or hope is for reciprocation, and his disappointment implies that the person is capable of returning the emotion though he is not the chosen object.

Thus it is because we are social beings and have the social instinct that we become aware of others as like ourselves and the possessors of minds. The animals, like ourselves, are aware of each other as like. But their consciousness of the likeness being without reflection amounts to nothing more than behaving towards each other as if they were what we call alike. Since it is sociality which gives us this assurance, the consciousness of other minds comes to us from our relations to one another and we do not learn so directly from animals that they have minds. Now in this experience that other humans excite our social desires and in turn satisfy them, which gives us the assurance that they also are minds like ourselves, it is not their similarity of behaviour to us which describes the situation into which I and another human enter. Hence the radical mistake of supposing that analogy of behaviour assures us of the existence of other minds. In general the part which the two participants in the social situation play is not the same but different; the child's response to the mother is not the same as the mother's caresses. In some cases, as in struggle for food or fighting for a female, the acts may be in most respects alike.<sup>2</sup> But the likeness of behaviour is not a necessary

<sup>1</sup> Compare as to this the following interesting passage of Shaftesbury, *Inquiry concerning Virtue and Merit*, Bk. II. pt. 2, § 1, p. 128, ed. 1727: "The courtesans and even the commonest of women who live by prostitution know very well how necessary it is that every one whom they entertain with their beauty, should believe there are satisfactions reciprocal; and that pleasures are no less given than received. And were this imagination to be wholly taken away, there would be hardly any of the grosser sort of mankind who would not perceive their remaining pleasure to be of slight estimation."

<sup>2</sup> The same thing is true in respect of moral judgments. The greater part of our practical action is the same, because the conditions are repeated, but morality recognises that the proper work of each may be



incident. What is necessary is that the whole situation, of going out on the part of one person, does not exist without participation of both, and consequently the experience of either is incomplete without the response, whether it is by way of help or hindrance, of the other. We become aware in this direct experience of something like ourselves.

The grades  
of such ex-  
perience.

The primary concerns of life and its appetites, and the simplest occupations of primitive man or the animals supply material for this experience of other minds. Such recognition is in the main instinctive, that is, is upon the instinctive level of life. On the basis of this experience the savage or the child or the animal even, may impute personality or something like it to inanimate things, the doll or stocks and stones or the wind and the sun. This is an act of projection which is perfectly intelligible when the mysterious object, a foreign mind, has been discovered by revelation of it through such experiences as have been described. It is the extension of the notion of a foreign mind to things which behave in some ways like persons or ourselves. But, intelligible as an extension of something already discovered, it is not intelligible as a foundation for the original belief in a foreign mind.

Psychologists have explained for us in detail how our consciousness of others changes, not only in extent but in grade, with our years; how for instance the father is to the child at first hardly more than a vague and unfathomable and arbitrary being, but as the child measures itself against its equals it comes in the end to understand him and to conceive him more precisely as a person like himself. All this too is intelligible as a further incident in the growth of the original fundamental awareness of a mind not our own.

In the reflective growth of the apprehension of the minds of others we are soon beyond those simple situations on the instinctive level with which we have

different, and it is not identity of conduct which makes morality (the identity is relatively accidental), but the conduct suitable to the position of each person.

hitherto been dealing. We make ourselves intelligible to one another by speech so that external objects described by one party are brought before the mind of the other. Mutual understanding by speech in reference to objects common to us is the most pervasive experience of reciprocity; and to this is added the direct description of our own mind to another person. On the speculative side we have co-operation of many minds in the pursuit of knowledge or science. On the practical side we have the combination of wills in conduct, with its judgments of the kinds of action which make common intercourse tolerable and good. Moral judgments and scientific agreement are the highest expressions of the existence of other minds which we experience directly and on this level 'acknowledge.'

But although we thus have direct experience of the existence of minds in others, such experience is not knowledge derived either from contemplation of the external or enjoyment of ourselves. We can enjoy only our own mind and not the mind of another. On the other hand we do not contemplate our own mind as if it were an external object, much less the mind of another. Thus I am not aware of B's mind as I am aware of his body, so that I should be able to inspect it and say what it is. Yet experience assures me that he has a mind. What sort of a mind it is, how the other mind feels in a given situation, I am left to divine sympathetically on the basis largely of analogy with my own. But that a mind is there, is assurance. It is not invented by inference or analogy, but is an act of faith forced on us by a peculiar sort of experience. It is only the details of its nature into which we have to enter symbolically by imagining ourselves in the situation of the other person. It is sufficient for our purposes to have indicated that their existence is revealed to us by experience directly and by what experience it is so revealed.

## CHAPTER II

### THE ORDER OF EMPIRICAL QUALITIES

#### A. A FORMULA FOR SPACE-TIME

Time as  
the mind  
of Space.

WITH this clue in our minds we may proceed to discuss the various empirical qualities that characterise existent things at their respective levels, as distinct from the categories. But it will help us to preface the discussion by attempting to sum up in a formula the relations of Space and Time as they have been exhibited in our analysis of Space-Time. The formula may be received as a hypothesis to be judged by its success in unifying the different forms of empirical existence, and it presupposes the conclusions reached in the preceding chapter. It is that Time as a whole and in its parts bears to Space as a whole and its corresponding parts a relation analogous to the relation of mind<sup>1</sup> to its equivalent bodily or nervous basis; or to put the matter shortly that Time is the mind of Space and Space the body of Time. According to this formula the world as a whole and each of its parts is built on the model with which we are familiar in ourselves as persons, that is as union of mind and body, and in

<sup>1</sup> In the following pages I sometimes use mind for the quality of mentality or consciousness, sometimes for the thing or substance which has this distinctive quality. The substance mind is the complex of mental processes contained within its proper contour of space-time. The mental processes are identical with their equivalent neural processes and are these processes as enjoyed. With a little goodwill on the part of the reader, there is no danger of confusion, and it avoids the use of the word 'mentality' which is odious, or the constant substitution of consciousness for mind which in common speech is used both as a concrete and an abstract name.

particular as a union of mind and brain. But as this may lead to the misapprehension that we are the standard and exemplar of things, the statement is better made in the reverse and truer form that we are examples of a pattern which is universal and is followed not only by things but by Space-Time itself. In any point-instant the instant is the mind or soul of its point; in a group of points there is a mind of those points, which upon the primary level of Space-Time itself is the corresponding time of that complex. Qualities will be seen to be the special form which on each successive level of existence the mind element assumes. In Space-Time as a whole the total Time is the mind of total Space. The difficulty of the formula arises from two sources, first, the complexity of the internal constitution of Space-Time, to which much discussion was devoted in a previous passage; second, the fact that the relation of Time to Space is not absolutely identical with that of mind to its body (by which, to avoid repetition, I am to be understood to mean the corresponding neural basis) but analogous to it, or rather that which corresponds to it under the simpler conditions of the case.

The identity between the relation of Time and Space and that of mind and body, on which the hypothesis is based, is that mind and its corresponding body are indissoluble and identical. Space and its Time are in like manner not two things but one, and there is no Space without Time nor Time without Space. The difference between the two relations, which prevents us from identifying them absolutely, is that in us mind is a new quality which belongs to physiological constellations of a certain kind, but these brain processes are in turn part of a vital body which exists as it were of its own right, in the sense that there are vital processes which have not the quality of mind. A certain constellation of such vital processes has the quality of consciousness. The quality of mind presupposes lower grades of existence. Accordingly the mind is able by reflection to think of its own corresponding neural processes, that is to con-

Grounds  
of this  
formula.

template them, while also, though not in respect of the same act,<sup>1</sup> it enjoys itself. This is possible because there are things external to our minds, among which things are of course included our own bodily organism which we are aware of through organic and other sensations. We are able to think of our neural mental processes because we can count our brains as being included amongst non-mental things; and because we can only enjoy ourselves as minds in so far as we are aware of and contemplate some object not our minds; for consciousness without an object does not exist. Thus on our level there subsists the distinction of enjoyment and contemplation.

The  
relation of  
point-  
instants  
to one  
another.

But in Space-Time as such this distinction has not yet emerged. Space does not exist of its own right and therefore Time is not a new quality which emerges from Space. Space or Time only exists with the existence of the other, and their relation is such as we might imagine that of mind and brain to be if neuro-mental processes could subsist by themselves without their presuppositions in a larger vital and hence in a physico-chemical world of things. Hence Time cannot contemplate Space nor the elementary parts of Space-Time contemplate each other. The relation of Time to Space is therefore something closer than that of being merely analogous to the relation of mind and its neural basis, and something less than that of being identical with it. Yet it is legitimate, and as we shall see fruitful, to regard Time as the mind of Space, just because while neuro-mental processes are also vital ones, they do not exist in their peculiar and distinctive constellation without being mind, while on the other hand mind is nothing apart from them.

It would seem more natural to say that Space-Time and point-instants enjoy themselves. However, if we do so we use the term enjoyment in a sense not possible for ourselves, with whom enjoyment is correlative or compresent with a non-mental object. In fact the 'experience' which Space-Time and point-instants have is

<sup>1</sup> It does not of course enjoy itself as seeing or hearing in respect of the act by which it contemplates the neural process which is equivalent to seeing or hearing. Thinking of that is a fresh enjoyment.

something out of which enjoyment and contemplation, as we know them in ourselves and can distinguish them on lower levels of existence than ours, both arise. This is but to say once more that Space-Time is the matrix of all empirical existence. But within Space-Time we can properly identify the relation of point-instants to one another with that of persons to one another, which are assured of each other's minds not by contemplation nor enjoyment of foreign minds but by that experience of co-operation or competition which may fitly be called social. There is a society of instants which are minds established through their connections in space. This analogy will develop in significance as we proceed. It was with a view to convenience in stating this result that the problem of how minds come to acknowledge each other's existence was introduced into the last chapter.

The other and greater difficulty in envisaging our formula arises from the immense complexity of the picture we have to draw of Time as the mind of Space. For these details we have to refer back to the previous chapters in Book I. (chs. i. ii.). Primarily we are to think of each instant, say the instant of reference, as the momentary mind of its point. But in the first place that mind is not merely momentary; for it is continuous with the minds of the points along its line of advance. This is the continuance of the mind of reference into its past and future. At the higher stage of real or conscious mind we have, correspondingly, enjoyment of the present as linked on to enjoyment of the mind's past and of its future. In the next place the instant is also spread out in space over the points which each instant intrinsically occupies, and which are its structure. The minds of these points which are thus intrinsically synchronous overlap and are one mind, one instant of time. We thus have first overlapping of several minds so as to form one mind spread out in time, and second so as to form one instant spread out in space. In the third place, any instant of reference is not only connected with all the past and future that lie on lines of advance passing

Complex-  
ities of  
detail.

through that point-instant, but owing to the extension of any moment in space there are points in the past (or future) which are all at the same distance in time from any one of the points in the extension of the moment. *a* is the present instant and there is a line of advance from *b* to *a*; but there is also a line of advance from *d* to *c*, and *c*, let us say, is synchronous intrinsically with *a*. *b* and *d* are thus in the past and they may be at the same date in the past with reference to the instant which is spread out over *a* and *c*, although there is no direct line of advance from *d* to *a*. If we combine these considerations we have a picture of Space-Time as a whole with regard to any point of reference. For that instant, Space is occupied partly with an extensive present, and partly with a past and future at various dates. This picture corresponds exactly to what we enjoy in our own minds, where there are tracts of present, past, and future enjoyments spread out in their appropriate spaces. As was said before, Space for itself at any instant not only contains present time but is full of memory and expectation.

There is a further complexity. For besides the present of reference there are other point-instants arrived at by entirely independent lines of advance, which the supposed outsider looking on at total Space-Time can see to be synchronous, but which are not present to one another in the sense in which points intrinsically synchronous are. We have seen that if a suitable selection of point-instants be made from total Space-Time the whole of Space is filled at any instant, just as the whole of Time streams through every point of Space and each point is the seat of the whole time-history of the world. Now it is difficult to understand how in total Space-Time any moment can thus be the union of present instants which are apparently indifferent to each other. We have to think of disconnected point-minds which yet in the total mind belong to the same instant. Yet this condition of things also has its analogue in our experience of minds.

For in the abnormal patient there may be co-conscious minds which are not aware of each other, or at least, as in

the Beauchamp case, one mind within the patient may be unaware of the other, while the second may still be aware of the first. The whole personality of the patient may be restored as in this case by the blending of the separate minds developed by dissociation within it. Sometimes a deeper hypnosis reveals a fuller mind which is aware of the person developed in a less deep hypnosis. The blending of co-conscious minds into the whole restored personality, a process already begun where one of the minds is aware of the other, suggests the solution of our problem.<sup>1</sup> The disconnected but synchronous presents which are not present to each other are comparable to co-conscious minds within the same body. In the perspective taken of Space-Time from any point of reference, these co-conscious elements do not exist and their space is filled by past or future. But in the total Space-Time, which unites the two minds thus synchronous but divided, the disunion is broken down and they belong to the same moment in the whole mind. It is in this way that we may represent according to our formula the fact that at any instant in the whole Space-Time's life, the whole of Space is occupied.

In some such fashion as this we may attempt to give fulness and some degree of explicitness and precision to the formula that Time is the mind of Space. There is nothing in the mere hypothesis which is strange or unfamiliar. The conception of a world-soul is an old one. Leibniz once described body as momentary mind,<sup>2</sup> and it

Mind a  
form of  
Time, not  
Time a  
form of  
mind.

<sup>1</sup> I have been led to this notion by an ingenious conjecture as to the relation of the divine mind and finite minds, which is made by Mr. A. E. Taylor in the course of his contribution to a Symposium with the title 'Why Pluralism?' in *Proc. Arist. Soc.* N.S. vol. ix., 1908-9, esp. p. 214. The point made there is that God's mind may be contained in the Universe and be in community with our minds, and God may know us and yet our sinfulness be hostile to him, much as Sally hated Miss Beauchamp. I am not concerned with this account of the relation of God's mind to man, mainly because what is distinctive of God is not mind but deity. I shall return to it in the sequel (Bk. IV. ch. i. pp. 350 f.). But I am using the spirit of the suggestion for my own different purposes.

<sup>2</sup> In *Theoria Motus Abstracti*, referred to by Mr. Latta, p. 230, n. 34, of his edition of Leibniz. (Oxford, 1898.)



is clear from the spirit of our inquiry that for it a point-instant and Space-Time as a whole are 'material' in an extended sense of that term. It is more important to explain, or rather to repeat, in what exact sense the formula is used. It does not mean that Time is mind or any lowest degree of mind. I do not mean as Leibniz meant that things on their different levels possess varying degrees of consciousness, from the distinct stage of intelligence down to the confused stage of matter. On the contrary mind is mind and Time is Time. Mind exists only on its own level of existence. I mean that in the matrix of all existence, Space-Time, there is an element Time which performs the same function in respect of the other element Space as mind performs in respect of its bodily equivalent. The points of Space have no consciousness in any shape or form, but their instants perform to them the office of consciousness to our brains. A similar caution will have to be put in presently in respect of the proposition that a point-instant is something material; and because of the danger of misunderstanding, the caution is almost more important than the formula. Our hypothesis is merely that alike in the matrix of finite things and in all finite things there is something of which, on the highest level we know of finite existents, mind is the counterpart or correspondent. So far as the philosopher is concerned with empirical facts, it is his business to indicate what this element is on each level. On the bare level of Space-Time, it is Time. Rather than hold that Time is a form of mind we must say that mind is a form of Time. This second proposition is strictly true. Out of the time-element, as we shall see, the quality mind as well as all lower empirical qualities emerge, and this quality mind belongs to or corresponds to the configuration of time which enters into the space-time configuration which is proper to the level of existence on which mind is found.<sup>1</sup>

<sup>1</sup> Still less are minds, as Leibniz thought, monads. The only monads are point-instants. Consequently the monads are not for me minds of a lower order, but they contain an element comparable to mind.

## B. THE ORDER OF QUALITIES

We come now to the order of finites with their distinctive empirical qualities. Empirical things or existents are, it has been more than once suggested in accordance with our general conception, groupings within Space-Time, that is, they are complexes of pure events or motions in various degrees of complexity. Such finites have all the categorial characters, that is, all the fundamental features which flow from the nature of any space-time, in an empirical form—each finite has its proper extension and duration, is built on the pattern of its specific universal, in a substance of a certain sort and the like. What remains to be described is its possession of quality. The facts can best be described as follows. New orders of finites come into existence in Time; the world actually or historically develops from its first or elementary condition of Space-Time, which possesses no quality except what we agreed to call the spatio-temporal quality of motion. But as in the course of Time new complexity of motions comes into existence, a new quality emerges, that is, a new complex possesses as a matter of observed empirical fact a new or emergent quality. The case which we are using as a clue is the emergence of the quality of consciousness from a lower level of complexity which is vital. The emergence of a new quality from any level of existence means that at that level there comes into being a certain constellation or collocation of the motions belonging to that level, and possessing the quality appropriate to it, and this collocation possesses a new quality distinctive of the higher complex. The quality and the constellation to which it belongs are at once new and expressible without residue in terms of the processes proper to the level from which they emerge; just as mind is a new quality distinct from life, with its own peculiar methods of behaviour, for the

Qualities as  
emergents.

reason already made clear that the complex collocation which has mind, though itself vital, is determined by the order of its vital complexity, and is therefore not *merely* vital but *also* vital. If, to borrow the language of Mr. Lloyd Morgan,<sup>1</sup> with whom on this matter I believe myself to be in general agreement (would that my faith were founded on knowledge comparable to his), the processes of a particular level are represented as *a* processes, a constellation of such processes is of such a kind as to be a new process *ab* with its quality B. That is, the thing which is based on that constellation of *a* processes has an emergent quality B, whose behaviour consists in *ab* processes; and though *ab* processes are also *a* processes they are not merely such, and are on a different level from the processes which are sufficiently distinguished from other forms of existence as being merely *a* processes.

Before proceeding to details, let me take a few examples.<sup>2</sup> Material things have certain motions of their own which carry the quality of materials. In the presence of light they are endowed with the secondary quality of colour. Physical and chemical processes of a certain complexity have the quality of life. The new quality life emerges with this constellation of such processes, and therefore life is at once a physico-chemical complex and is not merely physical and chemical, for these terms do not sufficiently characterise the new complex which in the course and order of time has been generated out of them. Such is the account to be given of the meaning of quality as such. The higher quality emerges from the lower level of existence and has its roots therein, but it emerges therefrom, and it does not belong to that lower level, but constitutes its possessor a new order of existent with its special laws of behaviour. The existence of emergent qualities thus described is something to be noted, as some would say, under the compulsion of brute empirical fact,

<sup>1</sup> *Scientia*, vol. xviii., 1915, 'Mind and Body in their relation to each other and to external things.'

<sup>2</sup> I fear I cannot assume that I should have Mr. Lloyd Morgan with me in all that I say in detail, especially as concerns secondary qualities of matter.

or, as I should prefer to say in less harsh terms, to be accepted with the "natural piety" of the investigator. It admits no explanation.

To adopt the ancient distinction of form and matter, the kind of existent from which the new quality emerges is the 'matter' which assumes a certain complexity of configuration and to this pattern or universal corresponds the new emergent quality. But whereas up to the present we have been content to treat the quality as something which is correlated with a certain configuration of its basis, we can now, following the clue of the relation between mind and its body, identify the quality with its peculiar form of body. Quality is therefore the empirical fact which we accept, and *prima facie* there is no more difficulty in accepting the fact that a certain kind of arrangement of existents of a lower level should be qualified with a new quality, than there is in accepting (on the common unreflective view) the fact that bodies under certain physical conditions look to us red, or certain other physical dispositions give what we call impressions of being hard or sweet. Quality belongs to things as mind or consciousness belongs to life-processes of a certain configuration.

Further discussion of the relation of different levels to one another may be deferred till we have attempted in some fashion to exhibit the various levels themselves in the light of the conception of emergent qualities. But a few observations are still in place, some of a more general character, some designed to remove possible misconceptions.

Empirical things come into existence, because Space-Time of its own nature breaks up into finites,<sup>1</sup> the lowest such finites being simple motions of different velocities or intensities of motion and different extents of it. Time and Space, either of them, creates differences in the other or breaks it up. But in a special sense Time is the author of finitude, for it is the transition intrinsic to Time which

Time as  
the gener-  
ator of  
qualities.

<sup>1</sup> I do not consider at present infinite existents. Whether there can be qualified infinities is discussed in Bk. IV. ch. i. pp. 363 f.

in the first place makes motion possible, and secondly provides for the ceaseless rearrangements in Space through which groupings of motions are possible. Time could not do its work without Space; but, this being presumed, Time is the principle of motion and change. It brings the future into present being and dismisses the present into the past. In the old Greek sentence it brings the unseen to light and buries it when it has appeared. Commonly it is personified in the figure of a scythe-man mowing down the old to make room for the young. This figure represents rather the transitoriness of things than the real nature of Time. "Nothing stands but for his scythe to mow." It forgets that the same Time which mows down the grass produces the new crop; and indeed when the simile, not intended to be pressed, is pressed, it seems to imply that conception of the world as a series of present instants, perpetually recreated, which as we have so often urged would destroy history and make even the present moment unintelligible. Time is in truth the abiding principle of impermanence which is the real creator. Or to descend from such high phrases, it is a kind of cosmic *gendarme* who makes stagnation impossible, and at once creates the movements which constitute things and keeps things in movement. *Circulez, Messieurs.* If it be true that Time is the mind of Space, or rather if Space and every part of it has something standing to it in the relation of mind to body, and that something is Time, then for us, as for certain Greek philosophers, soul is the source of movement.

Space-Time anterior to material things.

Some current conceptions are superseded by this statement. The first is the conception that things and events are in Space and Time, which are relations between things. We need do no more here than recall what has been said on this topic before. For philosophy this conception must be inverted, though we need not cease to use the language, if only because common speech does not imply by the phrase, things are in Space, that Space is a mere relation. For us Space-Time logically, and in fact, precedes finite things which are differentiations of

that stuff. This inversion, I may here recall,<sup>1</sup> is in principle one with that which was made by the late Osborne Reynolds, who treated Space as material and what we call material things as faults or strains in the uniform structure of Space.

This leads directly to the question, in what sense is Space-Time material. Matter has a popular and a philosophical meaning. As a philosophical term matter is correlated with form; and Plato regarded Space as the matrix in which things were made in the likeness of forms. For us the form or configuration of motion belongs not to Space but to Space-Time or motion, and form does not affect the matter from without, but belongs intrinsically to any finite piece of Space-Time. Space-Time then is the stuff which receives determination in the qualities it assumes as its complexity of grouping develops in Time. As stuff it is the recipient of quality in its various empirical or finite forms.

In the popular sense of the term, matter is a generic name for physical substance, and it is very difficult to say what is its distinctive quality. Let us call it for the present, materiality. Now Space-Time, though the stuff of material things and of all other things, is not material, if that means to possess materiality; it is anterior to such matter. But it is continuous<sup>2</sup> with material existence which is one of the earlier outgrowths from it. It is not attenuated matter, nor is even the spatial element of Space-Time attenuated matter. The only advantage which arises from speaking of it as material is that of helping to make clear that neither Space nor Time are mere relations between things or events, but if such impropriety of designation may be pardoned, they are themselves entities or rather Space-Time is an entity. Of the familiar types of existents, material existence is possibly closest to Space-Time and the stuff of reality may therefore most easily be conceived on the material analogy; for the

<sup>1</sup> Bk. I. ch. vi. vol. i. p. 173, note.

<sup>2</sup> I am using the word continuous in the popular sense. There is no break in the chain of finite qualified existents. The qualities as such form a discontinuous series, but they are connected spatio-temporally.



phrases 'stuff of things,' 'the matrix in which things are precipitated' are all physical descriptions. But if our hypothesis is sound, material existence is itself not purely material in the sense in which matter is opposed to mind. Matter like Space-Time contains an element of body and an element correspondent to mind which is its materiality, whatever that may be. Thus while Space-Time is continuous with matter, so is it equally continuous with mind. For mind as an existent, not simply as the quality of mentality or consciousness, is a living (and therefore a material) body with the mental quality. My motive in anticipating the discussion of empirical qualities by the hypothesis that Time performed towards Space the office of mind, was, that by suggesting that something corresponding to mind was present from the beginning at the lowest finite level of mere motion, I might remove the prejudice against any attempt to exhibit all the forms of existence as a continuous series from Space-Time upwards through matter to mind.

Miscon-  
ceptions  
superseded.

Certain minor difficulties may next be removed. The conception, once at any rate so widely current, that the ultimate constituents of things are matter and motion, must be modified. Matter it is thought is not itself a form of motion, or comparable with motion itself. It is so difficult to conceive motion as stuff, without something which moves; we still suppose a something we call matter which changes its place in empty Space. But this difficulty vanishes when once we have learnt to think of motion as stuff, and as in fact the first form of animated body. For there is no reason to regard matter (whatever we may learn from physicists as to what distinguishes matter from other groups of motion), as other than a complex of motion, that is made out of the original stuff which is Space-Time.

This conception that matter is in the end a complex of motions and not, like motion itself, ultimate, requires more courage (or rashness) to suggest than the last of these general pleas that I have now to urge, that another scientific conception, the ether, becomes unnecessary except possibly as a convenience of expression or imagina-

tion. For the ether has fallen on evil days and he who impugns it runs little risk. Regarded once as a substance or medium filling all Space, it has become little more than a name for the possibility of the transference of energy. "It is not too much to say," writes Mr. Soddy, "that the idea of an *ether* has been invented by scientific men for the express purpose of accounting for the flow of energy across empty space and is at present little more than a term to express the medium in which these transferences occur."<sup>1</sup> But the same process by which force has been attenuated into acceleration seems to do away with ether as a medium and leave it as a name for the motions in which the transferences of energy consist. For the empty Space which this medium is supposed to fill is a figment. Space is already full of Time; that is, there is no such thing as Space by itself, but the system of motions which in their continuity make Space-Time, and in all this there is no vacuum.<sup>2</sup> There is no greater difficulty in conceiving the motions of light in Space-Time, that is as a complex within Space-Time, than in conceiving them to be motions of this alleged medium. And a medium which fills Space is now, it would appear, gratuitous and even contains a contradiction. For it fills Space which is already completely full with motion. Thus since the office of ether can be performed by Space-Time, either the ether is unnecessary or we can dispense with the idea of Space-Time. Since we already are familiar with Space and Time from everyday experience, it seems better to keep to them and to acquire a correct notion of them so that empty Space or empty Time shall be seen to be unrealities, than to invent a new medium which makes Space-Time superfluous. The phrase 'the ether of Space'<sup>3</sup> is therefore, so I must think, either a mistaken conception if it means the ether which fills Space, or else a pleonasm, for it can only mean the ether which is

<sup>1</sup> F. Soddy, *Matter and Energy* (Home University Library, London, p. 184).

<sup>2</sup> Above, Bk. I. ch. ii. vol. i. p. 65.

<sup>3</sup> The title of a well-known volume of Sir Oliver Lodge (London, 1909).



Space, or more properly, since Space is nothing without Time, is Space-Time.

Matter.

The interpretation offered in general of the meaning of empirical qualities has been an extension downwards, made without concealment, of what can be derived from considering mind, where we have an order of vital existence blossoming out in respect of a certain portion of the living body into an emergent quality. To verify the interpretation in detail is a task which requires special knowledge, which I do not pretend to possess. Roughly speaking, the different levels of existence which are more obviously distinguishable are motions, matter as physical (or mechanical), matter with secondary qualities, life, mind. Perhaps this assumes too much for a rough enumeration, for the position of the secondary qualities of matter is under dispute. Now it is just at the earlier levels that the interpretation is most difficult. All I have to say on the subject is very little, and that little is encumbered for me with perplexities arising from two sources. One is the state of physical knowledge at the present moment. The great discoveries in physics which are changing the face of our notions about material things have not yet run to their completion. The other is a personal and more oppressive difficulty which lies in my own incompetence even to resume this knowledge, still less to deal with it and use it independently. I do no more than suggest that there is nothing in present knowledge as I understand the position to conflict with the interpretation which I am proposing to extend to all levels, and that there are many indications in its direction. It is not indeed the business of the philosopher, but that of the man of science, to trace the history of things. The philosopher may hope to point out if he can the general and outstanding features of the advance, as supplying a connection between the orders of finites; and I am hopeful that in spite of its defects what I have to say may be useful in this sense. But I do not seek to excuse myself on the plea that a philosopher who may by tradition be expected to know something of psychology cannot be

expected to be a master of all the sciences. For on the contrary it is my belief that the metaphysician who is to make the greatest advances will be one who, like the seventeenth-century philosophers, is familiar at first hand with the notions of the fundamental and simple forms of existence which are treated in physics and mathematics.

The enumeration of levels given above was, I said, a rough one. In the first place, it is not certain to my mind that matter with its chemical properties and its affinities is not a distinct level from physical matter. But the enumeration is probably most faulty at the beginning. From mere simple motion to matter is a far cry. It is by no means clear that matter is the next level to qualityless motion, that is to motion or groups of motion which have no other quality than to be motion. (For as we have seen it is indifferent whether we treat motion as the most developed category or as the first kind of quality. Finite motion is the category motion in finite form.) On the contrary it is most probable that there are intervening levels. The dissolution of the atom into elements in the electron theory shows physical matter to be an immensely complicated thing, and highly organised. He would be a bold man who would assert that the electron though our present ultimate may not be itself a complex of something simpler. These things are for the physicist and if they belong anywhere belong to the distant future. But of greater importance is that it is not yet absolutely certain whether matter is distinct or not from electrons. There would be nothing extravagant in supposing that electricity or light, for instance, were a substance anterior to matter in the proper sense. Rather, as I understand, it is probable.

The first question we have to ask is whether electricity or matter (supposing them for a moment not to be different in kind or level) deserve to be called finites with a distinctive quality, so as to be marked off from mere motion as a distinctive constellation of motions. I assume that this is so. But if so and if our interpretation be correct, their qualities should be expressible in terms

of motion. And of this there are, I understand, certain indications. Let us take inertia or mass and energy as at least items in this distinctive character of materiality. Electrical mass is said to vary with velocity, and to be itself due to the relation between the moving system and the energy of the surrounding 'ether.' Kinetic energy is a function of the mass and its velocity, and as to potential energy (a conception metaphysically so difficult), it is again as I understand referable to kinetic energy in the surroundings of the system,<sup>1</sup> and if so ceases to present metaphysical difficulties. Thus, to say nothing of matter proper, it does not seem very far-fetched to suggest that the electron itself may be a complex of motion, with which its electrical quality is correlated or rather identical.

There remains the question whether matter is something specifically distinct from electricity, or whether electricity is itself material and matter only a compound of electrons?<sup>2</sup> If it were so, the atom would not be on a different level of existence from the electron, but as compared with it might be like more complex forms of life as compared with the unicellular organism, displaying greater complexity of structure, but not of such an order as to lead to the emergence of a new quality, but still remaining on the same level of existence with the same distinctive quality. For on each level there may be variations within that order of existence which exhibit secondary differences so great as to be called in common parlance differences of quality or kind.

This is all that I can venture to say upon this most fundamental subject. If it is asked further by what steps it is that mere motion under the guiding hand of Time leads to the emergence of the material complexes of motion which we find in the world of things; how a specific motion like that of light is generated, with constant and maximal velocity, and how atoms come into existence as combinations of electrons with or without the

<sup>1</sup> Cp. Sir J. J. Thomson, 'Matter and Ether,' Adamson Lecture (Manchester, 1908).

<sup>2</sup> Cp. Soddy, *loc. cit.* p. 177.

distinctively material nucleus, with relatively constant constitutions; I can only reply that I do not know, and that it is not for the metaphysician to say, in the absence of indications from the physicist himself. Yet it is difficult to refrain from hazarding conjecture by way of asking a question. And so I dare to ask if there may not be in these ages of simpler existence something corresponding to the method pursued by nature in its higher stages, of natural selection; however natural selection is to be interpreted whether as operating upon insensible variations or upon large mutations. Whether that is to say, nature or Space-Time did not try various complexes of simple motions and out of the chaos of motion preserve certain types. The ground which justifies us in asking this question is that the beginnings of things present phenomena analogous to those of life; for instance, in the 'organisation' of the atoms; in the law that the physical and chemical elements observe certain periods or cycles which are connected with the number of the atomic weights, or "that the properties of an element are shown to be defined by a whole number which varies by unity from one element to the next";<sup>1</sup> in the observed transformation of atoms into atoms of other properties; all phenomena which suggest growth of a certain kind. If it were so the history of life and mind, and we may add societies, would not be so isolated a feature of things as it seems. But all this is rather a question which might be answered by those who know, if they do not dismiss it at once as fanciful, and is not asked as having any further pretension.

The primary qualities of things are the empirical modes of categorial characters, such as size, shape, number, motion of various sorts. Mass, inertia, and energy, we

Secondary qualities.

<sup>1</sup> "This number is to be identified with the atomic number of the elements [that is 'the number of the elements when arranged in order of increasing weight'], and also with the number of units of electrical charge in the atomic nucleus." This is the law discovered by H. G. J. Moseley. My information is taken from the obituary notice of him by Sir E. Rutherford in *Proc. Royal Soc.* 1916-17, vol. xciii.

have treated as belonging to a higher level of existence than the elementary categorial characters. Though they are the nearest derivatives from the primary qualities, they stand according to this view on a different footing from the primary qualities proper, and if called primary qualities, we must add primary qualities 'of matter' or of the material level of existence, merely to point the contrast with the secondary qualities of matter. They are in fact the distinctive features of materiality. In one sense it is clear that shape, size and motion and number (the traditional primary qualities) are not *qualities* at all. They are determinations of the thing, but are misnamed qualities because the secondary characters, colour, temperature, taste, and the like, are qualities, and the primary features are ranged into one class with them as a contrasting group within the class. It is the secondary qualities, in their strict sense of qualities whose position has now to be interpreted. In popular or non-philosophical notions, they are regarded as belonging to the thing itself. As belonging to things themselves, they may be reflectively regarded as corresponding to certain disturbances, of whatever kind, in or amongst the material particles, which disturbances are then notified to our senses by certain movements of the media, so that we apprehend these qualities. For example, when white light strikes a 'red' body certain processes are set up in the body, the nature of which I will not take upon myself to describe, in virtue of which all the other components of the light are absorbed, and only the movements of a certain wavelength are transmitted. The disturbances are initiated in matter, and whether the medium be itself material as air for sound, or liquid for taste, or sub-material as the 'ether' for light or heat, it is not the movements of the medium itself which are apprehended as possessing quality, but the material thing from which the movements of those media proceed.<sup>1</sup> Thus it is the ochre which is yellow, or

<sup>1</sup> Strictly speaking, this goes too far. What we see or hear is a place which is coloured or sounds. Further experience shows the place to have also the other characters of the ochre or bell. (Compare later, chs. vi. and vii.)

the vibrating string or the flute with its contained column of material air, which sounds. The movement in the 'ether' which makes the passage of the light is not coloured. It is the bell which sounds, not the air between the bell and our ears. When the poet says to the skylark that "all the earth and air with thy voice is loud," he means only as the context shows that the sound fills the air as moonbeams overflow the heaven. The ether wave is only seen when it illumines some material mote in its path, or the air set vibrating by a tuning fork is heard when it sets another tuning fork into sympathetic vibration. Thus it is a matter of comparative indifference whether the medium is material or sub-material. A material medium as in sound, or taste, or smell, introduces complexity into the statement without altering its general truth. For the air itself which is material may be the material body, or a part of it, which is the source of the sound as well as the medium of transmission; as in the case already named of the air in the flute or organ pipe.<sup>1</sup> Moreover, difficulties arise in respect of combination-tones, which are believed to be produced commonly within the ear and not externally. These difficulties are touched on in the note.<sup>2</sup>

Such may be taken to be a reflective statement of common speech, which itself is not reflective, and it is accepted here as furnishing the data which await interpretation. But it is not the view which has been current in

<sup>1</sup> "Even tuning forks give at least the octave, if not other partials. The octave partial from a fork originates, not in the fork, but in the air as a result of certain physical processes." H. J. Watt, *The Psychology of Sound* (Cambridge, 1917), p. 19, note 1.

<sup>2</sup> But see Watt, *loc. cit.* p. 55. "There is in recent years a growing trend of opinion towards the belief that the secondary tonal phenomena of combination tones, variation tones, and interruption tones, not to speak of beats, are not subjective, but rather like all audible tones, due to pendular components of the sound wave as it enters the inner ear."

Let us, however, suppose that such tones are subjective, whatever the account be of the physical internal stimulation which produces them; the sound still remains non-mental. The physical stimulation throws the auditory centre into a neural and mental excitement of the kind to which the sound heard corresponds. The sound heard would still be physical though not really present where it is heard (see later, chs. iv. and viii.).



philosophy and science in virtue of a long tradition from the days of Galileo. All that matter possesses in itself according to this view is the primary qualities, whether of the matter in bulk or of its insensible particles (macroscopic or microscopic primary qualities). What exists in the thing is certain movements. They affect our senses in appropriate fashion through the medium, and the quality of colour or sound is thereupon apprehended by the mind. These qualities are then as in the matter, movements, but for the mind, sense-qualities, and the sense-quality would not exist except for the mind (or according to a later version of the doctrine, except for the physiological sense-organ). I cannot accept this interpretation, which depends to my mind on overlooking the distinction between the apprehending act of mind which is provoked by the medium and the non-mental external object which in this case is the *sensum* or *sensibile*. The sense-quality owes nothing on this conception to the mind itself (nor for that matter to the physiological organ), which is but the means or instrument whereby an external sense-quality belonging to the thing itself is revealed. The colour, though it does not exist as colour in the absence of light, exists as colour in the absence of the eye. If I am asked how I can venture so lightly to question a doctrine so authoritative, I can only answer here, for the subject belongs to a later stage,<sup>1</sup> that at least in its accepted form the doctrine cannot stand. For since Berkeley's day no one can doubt that primary qualities are on the same footing in their relation to the mind as secondary ones, that if the latter are mental objects only so also are the former; that it is no more possible to understand how spatial and temporal characters should look and feel so than how colour and heat should look and feel so. Both or neither must depend on the mind. If neither depends on the mind the distinction of movement and colour belongs to things; if both do, there still remains within the mental objects the distinction of kind between primary and secondary ideas. These questions arise later. And in the next place

<sup>1</sup> See below, ch. v. pp. 138 ff.

my concern is not so much to controvert an existing doctrine, however firmly rooted, as to indicate an interpretation of facts which shall fall in with a comprehensive hypothesis and in this way supply indirectly the justification both for the general hypothesis and for the interpretation of particular facts; and this implies anything but lightness of heart in the performance.

Accordingly for me the sensible character of what we apprehend in the object, that is of the *sensum*, stands to the movements in the thing, that is to the primary determinations which underlie it, in the relation of consciousness to its underlying vital process. The secondary quality is the mind or soul of its corresponding vibration or whatever the primary movement may be. Thus while we cannot say that the ether vibrations of a certain wave-length are red, we can say that the movements in the material thing, in virtue of which the ether transmits to our eyes only vibrations of a certain wave-length, are red. Secondary qualities are thus a set of new qualities which movements of a certain order of complexity have taken on, or which emerge with them; and the material movements so complicated can no more be separated from the secondary quality (which is not merely correlated with them but identical with them) than the physiological processes which are also psychical can be what they are in the absence of their conscious quality. Thus a movement or process or act occurring in a material thing if it is of the right sort, is red or sounds or is fragrant; such bodily acts have no longer merely categorial and material characters but possess secondary quality. The movement which may be thought of as being a complex of primary determinations is revealed to sense as a *sensum* with its so-called sense-quality. The philosopher may learn from the poets as well as from philosophy or science, and in regarding colour, for example, as the mind or spirit or soul of its primary movement I may appeal without scruple to Meredith's *Hymn to Colour* for support to this conception, and shall afterwards appeal to it again in a more important connection. In this great poem colour is a kind of spirit of which we catch transitory glimpses in



moments of its rarest manifestations.<sup>1</sup> Or we may refer still more appropriately to a sentence of Pater's in his essay on Botticelli in *The Renaissance* which Mr. Bosanquet, to whom I am indebted for it, quotes so effectively.<sup>2</sup> "Colour is a spirit upon things whereby they become expressive to our spirit." The words are used and quoted by Mr. Bosanquet in a different connection from ours. But they can be adopted here in their literal sense.

'Permanent  
secondary  
qualities.'

The conception that a secondary quality is the mind of its primary substrate may be carried further. Hitherto we have been speaking of the quality of the sense-datum, that is, of a primary process which though substantial like all movement is transitory. Now the colour or taste of a thing usually means not a transitory but a permanent quality. Such permanence may be secured in things by the continuance of the light, or the solution of the stuff in liquid. The thing maintains in this case its colour or its sweetness as the mind maintains its activity of thought or vision. But in the dark the leaf is no longer coloured; it is green then, only in that it is in its primary determinations such as to take on the secondary quality with the incidence of light. When not active as a sensum or sense-datum, the sensible quality slips into a disposition which is on the primary level. It awaits the entrance of the conditions which are to complete it and convert it into that constellation of primary movements which possesses or carries colour. Precisely in the same way in the absence of the completing conditions which evoke consciousness, the mind slips into a physiological or psycho-physical disposition, which is only potentially

<sup>1</sup> Meredith however still holds the depreciatory view of Time. He says of colour, "thy fleetingness is bigger in the ghost than Time with all his host." The stanza I think of more particularly is:

Of thee to say behold, has said adieu.  
But love remembers how the sky was green,  
And how the grasses glimmered lightest blue;  
How saintlike grey took fervour: how the screen  
Of cloud grew violet; how thy moment came  
Between a blush and flame.

<sup>2</sup> *Principle of Individuality and Value*, p. 63.

conscious, but is actually unconscious. Thus the permanent secondary quality of a thing postulates the permanence or continuance of activity and the quality is such continuing activity. Taken by itself the thing possesses the quality in the potential form, in the above explanation of that phrase.

One remark may be added, already hinted more than once, and here again repeated only in passing, which follows from the relation of the secondary quality of, say, colour to its primary basis. It is not true that the extension of a material thing is impossible without secondary qualities, as Berkeley taught. If we see extension always coloured, that is because we see it and not because it is extended. Mere extension is not enough for colour. It is true that colour is always seen occupying extension. But the colour is a determination of the extension of it and the extension is not a property of the colour.

The quality of mind we have regarded as an *Life*. emergent from the stage of living existence with its distinctive quality of life. Mind as a thing is a living being with the mental quality or consciousness. Following this clue we may interpret life as an emergent from material existence. I pass over here as beyond my competence the question whether life is the next level of existence to matter, or whether chemical process is not an independent intermediate level between physical existence and vital: whether, that is to say, chemical matter is not so distinctively different in the way of complexity from mere physical matter that 'chemism' is properly a new quality emerging from physical existence. Such a question is one which can properly be answered only by the expert, from whom philosophy has to take its material. I am content here to follow the usual habit of thought and lump together physical and chemical processes as merely material. Life then would be an emergent quality taken on by a complex of physico-chemical processes belonging to the material level, these processes taking place in a structure of a certain order of complexity, of which the processes are the functions. A living process is therefore

also a physico-chemical one ; but not all physico-chemical processes are vital, just as every mental process is also physiological but not all physiological ones are mental. Moreover, just as mental processes belong only to a part of the vital structure, so in life we are dealing with a body which performs processes and exhibits features purely material. Thus an organic body has weight, it exhibits the physical processes of filtration, of pressure of blood upon the walls of the arteries and the like. The total of physical processes which take place within the body, though all subserving life, is not all of it co-extensive with that limited set of processes which are identical with life. "We must not," says Mr. J. S. Haldane, "mistake measurements of the balance of matter and energy entering and leaving the body, for information as to the manner in which this stream passes through the living tissues."<sup>1</sup>

It is thus a certain constellation or complex or collocation of physico-chemical processes which behaves vitally, and the presence of such constellations which makes the structure to which they belong an organism. To call it organism is but to mark the fact that its behaviour, its response to stimulation, is, owing to the constellation, of a character different from those which physics and chemistry are ordinarily concerned with, and in this sense something new with an appropriate quality, that of life. At the same time, this new method of behaviour is also physico-chemical and may be exhibited without remainder in physico-chemical terms, provided only the nature of the constellation is known—provided, that is, we remember, as Mr. Lloyd Morgan so rightly insists, that there is already a constitution in the organism, a certain collocation, to return to my own phrases, of movements, which may be called the moving structure, to indicate that it is not merely anatomical but physiological. Until that constellation is known, what is specially vital may elude the piecemeal application of the methods of physics and chemistry. Accordingly

<sup>1</sup> J. S. Haldane, *Mechanism, Life, and Personality* (London, 1913), p. 36.

I am prepared in this sense to believe that they may be right who maintain that biology must be treated as a special science, dealing with its own particular subject of organic life which is distinguished by its own delicate capacity of self regulation. This is the position of Mr. Haldane ; who at the same time admits to the full the triumphant contributions which have been made to the understanding of life by the physico-chemical method. There seems to me no more difficulty in believing this than in believing that psychology is a special science dealing directly and at first hand with mental process, though all mental process is identical in the end, when once the constellation is known, with its correspondent neural process. If the study of life is not one with a peculiar subject-matter, though that subject-matter is resolvable without residue into physico-chemical processes, then we should be compelled ultimately to declare not only psychology to be a department of physiology, and physiology of physics and chemistry, but, if we are consistent, to be a chapter, like all other sciences, of mathematics, which deals with motion and Space and Time. But in pleading that life is still *also* entirely physico-chemical, as a complex of processes or structures belonging to that level, I fear I am forgoing the support of such so-called neo-vitalists as Mr. Haldane.

How the new emergent quality of life is to be characterised in detail it is not for me to say. Organisation is of course insufficient, for even atoms are highly organised and crystals are often instanced as cases of organised things below organisms. Self-regulation has been mentioned above, and organisms exhibit in addition the property of plasticity in their responses, and, once more, the power of self-reproduction. But these characters are after all but the different ways in which the distinctive quality of life exhibits itself, or which are summed up by it, and for our purposes no advantage is gained by substituting the details comprehended under life for the simple quality of life itself.<sup>1</sup>

<sup>1</sup> Mr. Haldane's view, besides the volume cited, is expounded in many papers. It is largely founded on, or enforced by reference to his

Entelechy.

Life is thus intermediate between matter and mind. It is also material in that it is expressible (and we may hope may be expressed hereafter) in material terms, but it is not purely material. Life is not an epiphenomenon of matter but an emergent from it. On the other hand, there seems to be no need for postulating in its case any more than in the case of mind a new substance, a directing principle, or, as Prof. Hans Driesch calls it, an 'entelechy' or 'psychoid'.<sup>1</sup> The new character or quality which the vital physico-chemical complex possesses stands to it as soul or mind to the neural basis. The directing agency is not a separate existence but is found in the principle or plan of the constellation. The considerations which have led Mr. Driesch to his conclusion are well known and their weight is undeniable, and it is most of all the empirical considerations which carry weight; such as are derived from the phenomena of regeneration of lost parts or from the striking facts that "in the earliest stages of embryonic development the cells of the embryo may be completely separated from one another or their mutual arrangement may be completely altered by mechanical means and yet one of the separated cells or the disarranged collection of cells may

experimental observations of the delicate regulation of the respiration in response to minute variations in the air. One of the most attractive of these statements is to be found in an address on 'The Place of Biology in Human Knowledge and Endeavour' in the *Transactions of the South-Eastern Union of Scientific Societies* (1915). See his recent Silliman Lectures for fuller statement. The most recent is contained in a Symposium in *Proc. Arist. Soc.*, 1917-18, vol. xviii. N.S. between Messrs. Haldane, D'Arcy Thomson, Chalmers Mitchell, and Hobhouse (now reprinted in a separate volume with other papers). Unfortunately Mr. Lloyd Morgan's view is not represented in this discussion. It is the one with which in the above interpretation I venture, not on grounds of scientific knowledge but on general philosophical grounds, to feel general agreement. This view is expounded in his *Instinct and Experience* (London, 1912), ch. viii. 'Finalism and Mechanism.' See also A. S. Pringle-Pattison, *The Idea of God* (Oxford, 1917, Lect. v.). It should be added that Mr. Haldane's so-called vitalism altogether repudiates both the earlier vitalistic theory and Mr. Driesch's new form of it.

<sup>1</sup> *Science and Philosophy of the Organism* (Aberdeen, 1908-9). Also his *Problem of Individuality* (London, 1914).

develope in a perfectly normal manner" (I quote Mr. Haldane's summary<sup>1</sup>), though if the animal grows from only half the embryo it will be only half the normal size. I am not in a position to discuss these facts technically. But is there anything in them which is inexplicable when the initial constellation is considered? Instead of straightway postulating an entelechy to act as a guide, it would seem to me more reasonable to note that a given stage of material complexity is characterised by such and such special features, and that these are part and parcel of the nature of the principle or plan of the new order of complex. It is quite true that no merely material complex will regenerate itself or reproduce itself or grow up into a small perfect specimen from half the stuff of a full-sized one. But the fact is that the new complex is no longer purely material, though it is also material. By accepting this we at any rate confine ourselves to noting the facts, observing loyally the differences of these existents from existents of a lower order; and do not invent entities for which there seems to be no other justification than that something is done in life which is not done in matter. Why should not matter whose quality has budded out from Space-Time bud out in its turn into a new quality, the ultimate stuff being throughout the same and the proximate stuff of life being matter?

Two causes appear to prejudice this inquiry and to stand in the way of a satisfactory interpretation. One is the false or at least ambiguous antithesis of the mechanical and the vital, or of mechanism and life. When life is identified with mind, the antithesis becomes still more acute. But 'mechanism' or the 'mechanical' means two things which may be confused. It may stand for the behaviour which is distinctive of matter pure and simple or it may stand merely for determinate behaviour. Now it is possible for a thing to be mechanical in the sense of acting in a way determined infallibly by its structure and not mechanical in the sense of being purely material. Half the reason for holding

The antithesis of mechanical and vital.

<sup>1</sup> *Loc. cit.* p. 29.



that life (or mind) is an entity independent of its body and working through it is that no machine can do what life or mind does. The question must be asked in what respects is mind different from a machine? A machine is a structure which effects certain results. Now a living thing is not a material machine. Yet in so far as its structure enables it to perform certain vital processes, to react in certain ways to stimuli, it behaves determinately in accordance with its structure. The structure allows for a certain latitude of the response within limits, but the response is within those limits as determinate as if the structure were purely material. In this sense of mechanical the organism is mechanical and we could understand it to be so, provided we knew the constellation of its structure. On the other hand, it is equally true that if we regard the organism as behaving according to the laws determined by its own peculiar structure, a material machine may, since it also obeys the laws of its structure, be said to be alive, and in many ways this is a helpful conception. The difference of the material and the organic 'machine' lies in the comparative rigidity of the one and the plasticity of the other. Plasticity is not realised by matter but waits for life. But if we could secure the right sort of machine it would be an organism and would cease to be a material machine. We have no right therefore to confuse the definiteness of mechanism with its materiality, and on this ground cut off the continuity between the material structure and the emergent order of vital structure. The true antithesis is that of the vital and the material and not of the vital and mechanical.<sup>1</sup>

The other cause is the dogma that mind or life (so far as life is taken to be the same as or allied to mind) presents us with a soul for which there is no precedent in the lower forms of existence. Life and matter seem

<sup>1</sup> This confusion of the determinate and the material also vitiates Mr. Haldane's work, otherwise so moderate and careful in its statement. I should, however, add that I am not concerned with his conception of philosophy and indeed I do not see what a theory of knowledge has to do with the matter.

to be parted by an impassable cleft. To account for the facts of life and mind we need at least an entelechy. Now supposing the case were really so, we should still, in loyalty to the facts, be obliged, I think, to content ourselves with the interpretation that life is the quality distinctive of a certain material constellation. The mystery of it would remain deep. But it has ceased on our hypothesis to be so unintelligible. For though matter has no life, it has something which plays in it the part which life plays in the living organism and mind plays in the person; and even on the lowest level of existence, any motion has its soul, which is time. Thus matter is not merely dead as if there was nothing in it akin to life. It is only dead in that it is not alive as organisms are. Compare matter with Space-Time; there is as much reason for assuming an entity or entelechy 'materiality' distinct from the motions which are the behaviour of matter as to assume an entity 'life' or 'mind' distinct from the basis of life in matter. Always under the caveat that Time and materiality and life and mind are empirically not the same and not merely different degrees of one and the same thing, we are compelled to the conclusion that all finite existence is alive, or in a certain sense animated.

Mind is the last empirical quality of finites that we know, and we have seen it to be an emergent from the level of living existence. We have thus verified, how faultily no one can be more painfully aware than I myself, on the inferior levels what was more easily discernible on the highest. Quality is something empirical which in every case but that of motion is seen to emerge from a level of existence lower than itself; and as to motion it is to be described indifferently as empirical or categorial, for it is the meeting-point of the two. Each new type of existence when it emerges is expressible completely or without residue in terms of the lower stage, and therefore indirectly in terms of all lower stages; mind in terms of living process, life in terms of physico-chemical process, sense-quality like colour in terms of matter with its movements, matter itself in terms of motion. More- Summary.



over, everywhere this result appears to be secured as it is in our own persons. There is a body or material of the lower level, of which one part is so complicated as to be endowed in fact with a new quality, which performs to it the office of soul or mind and may be called with proper caution its mind, body and mind being identical in this portion of the body in question. Life we have seen is a selection from a larger whole of physico-chemical processes. A secondary quality like colour belongs to one part or grouping of primary qualities in the material body to which it belongs, other parts of which may be occupied by other secondary qualities, and others by mere matter without secondary qualities; according to the conception reached at an earlier stage that a thing or substance was a volume of space-time occupied in diverse parts so as to fill its contour by qualities.

Using symbols we may put the case briefly thus. A complex of processes on a level  $L$  with the distinctive quality  $l$  becomes endowed, within the whole  $L$ -thing or body, with a quality  $l'$  and the whole thing characterised by this quality rises to the level  $L'$ . The processes with the emergent quality  $l'$  constitute the soul or mind of a thing or body which is on the level  $L$ . The mind of a thing is thus equivalent only to a portion of that thing. Hence, when in us the mind in the proper sense of that word apprehends its bodily organism through the organic sensations, we have one portion, a highly developed one which carries the mental quality, apprehending a part of the whole body which is at the lower level. Another corollary is the obvious one that a thing or body at the level  $L'$  is as it were stratified and, besides containing processes which have the quality  $l'$ , is built up on processes of all the lower levels down to the spatio-temporal one itself.

Thus the soul of each level is the soul of a body which is the stuff of which it may be called the form. There is a close connection between this conception and that of the universal (or as it was called in Greek philosophy, the form). The universal is, as we have seen, the pattern of construction of the particular. So

far as the neural complex has a certain pattern of complexity it has the mental quality. But we cannot say that the quality belongs to the universal in any sense in which it does not belong to the particular. The universal simply emerges with its quality on the higher level of existence. Owing to the historical associations of the word form it is better therefore to keep to the simpler designation of a quality as a quality rather than as form of its body.

The body or stuff of each new quality or type of soul has itself already its own type of soul, and ultimately the body of everything is a piece of Space-Time, the time of which is the soul-constituent which is identical with the body-constituent. Beginning with spatio-temporal finites, there is a continual ascent to newer and more developed existents, so that the course of Time issues in the growth of ever new types of 'soul,' and in this way all existence is linked in a chain of affinity, and there is nothing which does not in virtue of its constitution respond to ourselves, who are but the highest known illustration of the general plan; so that there is nothing dead, or senseless in the universe, Space-Time being itself animated.

It will now be clearer that, as was insisted before, the minds of various levels are not merely minds with varying degrees of what is mind in the distinctive sense. Life is not a consciousness with something of its powers left out, nor materiality consciousness with still larger omissions and imperfections. The difference is one of kind or quality and not of degree. Nor are we to suppose with Leibniz that the minds of lower orders of being, for example living beings, are monads like our minds which preside over the living beings. Such a supposition was natural if our mind is itself thought to be a monad. But if we begin with what comes first, Space-Time and its constituent point-instants, which may be called monads, we realise that our minds themselves are but special complexities of Time. That special complexity carries with it the quality of mind, and it is identical with its bodily neural equivalent. A lower complexity of Time carries the quality life; a still lower one materiality or colour.

'Minds' of various levels differ in kind.

Always these qualities which perform the mental office towards their bodies are themselves complex, and in their order of growth the higher complexity arises out of a lower complexity. Thus the time-complexity contained in a material body as such with physical, and let us assume chemical, modes of behaviour becomes in life the foundation of a still greater complexity of time-configuration; and similarly in the emergence of mind out of life. So much the more important is it to urge that in declaring all things down to point-instants and Space-Time itself to be fashioned on our plan, what we really mean is that there is a more fundamental plan of which we are only the highest known empirical illustrations; and that therefore it is truer to call mind the time of our body than to call time the mind of its space.

The higher emergent has been described as based on a complexity of the lower existents; thus life is a complex of material bodies and mind of living ones. Ascent takes place, it would seem, through complexity. But at each change of quality the complexity as it were gathers itself together and is expressed in a new simplicity. The emergent quality is the summing together into a new totality of the component materials. Just in this way, as our thoughts become more and more complex, some new conception arises in the mind of a discoverer which brings order into the immense tangle of facts and simplifies them and becomes the starting-point for fresh advances in knowledge; or in social affairs some vivifying idea like democracy arises to create as it were a new moral order, in which again distinctions and divergences arise which demand in their turn a new practical key. Somewhat in this fashion complexes of one stage of existence gather themselves for a new creation, and additional complexities mean new simplifications.

## Corollaries.

It follows as part of this relation of the higher level to the lower, as an empirical emergent from 'material' already endowed with its own quality, that the empirical qualities of the 'material' are carried up into the body of the higher level but not into its new quality. Life is

based on material existents which have colour or smell or weight. But life is not itself coloured, nor, except in a metaphor, sweet. The living thing has colour in respect of its body but in respect of its distinctive life it has not. Mind has no secondary qualities, nor even has it life, but only as identical with a living thing has it life. The thing called mind has not in respect of its mentality the lower empirical qualities. Energy is an empirical quality of matter and does not belong to mind or life. Yet it is easy to interpret the phrases 'vital' or 'mental energy' as the energy of the material equivalents; and in this way, be it observed, the difficulties of the application of the principle of conservation of energy to life and mind disappear. For we have no need to think of any entity soul interfering, with its own peculiar energy. Contrariwise the categorial characters are carried up into the emergent existent. For everything is a complex of space-time and possesses the fundamental properties of any space-time, which are the categories. Hence though life is not coloured it is extended and in time, and this we have seen to be true of mind as well. It is a substance and exhibits causality and the like.

This difficult relation is made clearer by referring to what obtains in our own experience, and extending the conceptions used in describing it to other levels of existence. Our minds enjoy themselves, we have agreed to say, and contemplate external things on the level of life and lower levels. The brain which carries mind with it comes in the end to be thought of as an object contemplated. Thus the same thing which as contemplated is a living thing enjoys itself in its distinctive quality of mind, and enjoys its mind under all the categories. We can thus more easily understand how a thing which is not mind but has something which performs to it the office of mind can be at once a member of a lower level and 'enjoy' itself according to the mode of enjoyment proper to its 'soul' in its distinctive character. Its mode of enjoyment need not be 'minding' as with us, but living or, shall we say? materialising. It is for itself as it experiences itself directly in enjoyment. Its basis in its

body or matter is one of the class of objects it contemplates. The twofold way in which our minds are minded and our brains thought of, and in this sense observed, enables us to overcome the apparent difficulty of denying that the empirical characters of the basis enter into the emergent though the categorial ones do, while at the same time we assert that there is only one and the same existent, which is on the higher level but also belongs to the lower one, and is accordingly differently experienced. To the other things on its own level it is related as we are related to one another. Certain special difficulties in this statement I pass over for the moment, for we are definitely trenching on questions belonging to the theory of knowledge, without which it is now hardly possible to proceed a step further.

It remains to add that upon any one level there may be several qualities which yet are of the same order. This is the case of the secondary qualities of matter, which apparently are all specifically different. On the level of life or mind we have the different types of plants or those of animals. Now in these two cases, the quality of life or mind seems to be one and the same, and the difference to lie in the bodily structure of the various types. There are on one level degrees of perfection<sup>1</sup> or development; and at the same time there is affinity by descent between the existents belonging to the level. This difference of perfection is not the same thing as difference of order or rank such as subsists between matter and life or life and mind. But the various secondary qualities seem to be different in themselves and to have different bodies. It may be, however, that amongst them too there are degrees of development or perfection, so that they may be found in the end to be affined as the animals are or, to take the other instance, as the chemical elements are.

A further question which is directly raised by the whole interpretation of new qualities as emerging from a lower basis is how far such new qualities can be predicted. The discussion is better deferred till we can raise the

<sup>1</sup> For the notion of perfection, see later, ch. ix. B, p. 264.

question of human freedom. Meanwhile it is enough to observe that there is only one respect in which the world is predictable with sufficient knowledge, and that is the spatio-temporal. A calculator given the state of the universe at a certain number of instants or at one instant with the law of its change could, given sufficient powers, calculate what the spatio-temporal condition of the world would be at any given later instant. But he could not on our interpretation predict what qualities would be evoked by the complexes he predicts in Space-Time, unless he lived to observe them.

## CHAPTER III

### THE EMPIRICAL PROBLEMS

How the  
problems  
arise.

QUALITIES are the empirical as distinguished from the non-empirical or categorial features of existences, the brand of their finitude, or rather (since we must provide for the possibility of infinities with quality) of their being less than the whole of Space-Time. Qualities are to be noted and registered but accepted without the pretence of accounting for them. All that philosophy can do is to show that they correspond to and are identical with the spatio-temporal configurations which are their ultimate basis; and, taking over from the sciences what can be learnt as to the actual order which exists among them, to exhibit, as the attempt has been made in the preceding chapter to exhibit, the way in which the higher quality is identical with a certain complexity in the existences of a lower order of quality.

This account of the relation of what is strictly empirical to the non-empirical is one portion of the second of the two departments of philosophy which were described in the Introduction. The first department was to describe and account for the categorial features of things. The second department was to consider the relations of empirical things to the non-empirical, and their relations to one another which arise from their being complexes of space-time, and related to one another consequently on being contained within the one Space-Time. Empirical facts and laws are the subject of the so-called special sciences. Whatever questions arise from the generation of empirical existences within the matrix in which they

are, not lost, but contained, falls to the special science of philosophy. One of these questions has now been answered, however imperfectly, in the philosophy of quality. The larger question remains. Its interest resides to a great extent in the position which is to be assigned to minds. Minds are one set of finites, the highest we know, whose life or 'minding' is experience. But their relations to other finites should be, if they also are in the end complexes of space-time, nothing but illustrations of universal relations, which hold between finites as such, in virtue of their spatio-temporal nature. Accordingly the prerogatives of mind, which seem at the first blush to place it in a unique position, will appear to be illustrations of more fundamental characters in which all things share alike. The answer to the question what knowledge is and how it is possible, will be to show that given a finite with the distinctive character or quality of mind or consciousness, knowing falls into its place in a common scheme. The so-called theory of knowledge becomes an incident in metaphysics and not the foundation of it.

Some of these relations will now be enumerated. The consideration of them I call the empirical problems. The problems stated.

I. The first and simplest relation is that all finites are merely connected together within the one Space-Time. They may be successive, or co-existent with one another, but they all belong together. In order to use a word which covers both cases, I shall say they are compresent. Such compresence involves directly or indirectly connection by way of causality. When one of the finites is a mind, and the other of lower level, the compresence is the relation described as consciousness *of* an object, or in general cognition (ch. iv.).

II. Finite things are substances, and as such are volumes of space-time with a determinate contour and internal configuration. That is to say, they are determinate volumes of space-time which are the scene of movements possessing their appropriate qualities, and they persist throughout the succession and interplay of



these movements through a finite time, and have a beginning, a history, and a death. The spatio-temporal volume or contour is that which unifies all its qualities into a connected whole. There are therefore three constituent 'elements' to be distinguished within a thing. First, its space and time. Second, the processes with their qualities which take place within it. Third, its permanent plan of construction or configuration. Considered in relation to a percipient (I use this word to cover a mind engaged in any mental operation whatever, not merely that of perception proper) the first is the place, date, extent, and duration of the thing. The second is the sensible qualities of the thing. As transitory or momentary these are the percipient's *sensa* or *sensibles*. The sensible quality as we have seen is itself a substance or thing within the thing whose quality it is, it is a continuum of *sensa* or *sensibles*. The third, or plan of configuration or spatio-temporal pattern (itself a pattern of qualities), is the object of thought or conception. It is clear that these elements are not separable: there is no finite space-time which does not consist in movements and which has not its universal plan of configuration. But unless there is a percipient, these movements and this plan are not sensed or thought. To call them *sensa* or thoughts is to speak of them in their compresence with a percipient (ch. v.).

Furthermore, each movement or let us say process or act of the thing, though itself transitory or momentary, being one act of the thing does not, or at least may not, leave the whole unaffected in its internal character, but the next act may be affected by the past act, or the thing may acquire a disposition in virtue of its history. This is the case, for instance, with the arrangement of the molecules in a permanently magnetised bar. In the case of percipients, this is the fact of retention of past experiencings, or reproduction.

III. A thing affects another with which it is compresent differently according to the latter's relative position in space or time or its intrinsic receptivity. In consequence it presents to the second thing only a portion of its

whole character. For instance, a thing which is luminous on one side only, like a dark lantern, illuminates objects on that side but not objects on the other side. Again, a platinum crucible may be unaffected by acids contained in it which might enter into combination with a glass vessel. Flowers may blush unseen. It depends on the nature of the second thing how much of the first thing affects it. But the first thing is still the spatio-temporal unity of all its characters.

In relation to a percipient, this is the simple fact that all experience is selective and depends on the position in space and time, and on the sensibility or other receptivity of the mind. An object wears partial aspects to the percipient on different occasions, and the thing perceived is collected from many experiences which are synthesised. The varying aspects of a thing are then called its sensible appearances; and it is hardly possible to speak of the relations of things in general to one another in this regard without using the language of human experience. The table presents a different aspect to the fireplace and to the wall. The glass vessel is sensitive to acids which do not affect the platinum crucible; and the like (chs. iv. and vii.).

IV. Since Space-Time is continuous, things are not cut off from one another, and a thing itself contains other things, and is part in turn of a larger complex. Thus the room in which I write contains chairs, and walls, and air, and me, and is also part of the house. At the same time fairly distinct lines are drawn in nature (in Space-Time) which make it artificial to speak of me together with my chair as a thing in the same sense as I am a thing or the chair is a thing; just because we can be parted from each other. Now the characters which belong to anything intrinsically are those which are contained within its own spatio-temporal volume. These are presented to any compresent thing as the 'sensible appearances' of the thing. But the thing owing to its combination with something else may affect a compresent thing (A) differently from when it is alone. Thus when the stick is half immersed in a pool, the light proceeding from the stick to a lens (the lens of the human eye is only a

particular case) produces an image of a bent stick, because the lower half of the stick is a stick in water and not in air. Thus the aspect which the stick wears is not intrinsic to the stick in air. Again, it may happen that if A has a defect or is unlike in any way to things of its kind, and is thus abnormal, the thing will not produce on A its standard effect but a distorted one; as for instance if a hammer strikes a cracked metal bell, or a 'dud' shell buries itself in the ground without exploding.

When A is a percipient we say that the sensible appearances of the thing which is masked by the co-operation of some other condition do not really belong to the thing; that they are not its sensible appearances but its 'mere appearances.' When the abnormal character of A affects the result, the appearances are illusory appearances, and A is the victim of illusion in his apprehension of the object (chs. vii. and viii.).

V. The processes within a substance are in direct or indirect causal relation with one another; the thing acts in a determinate way. In mind mental acts are also connected causally with one another, and the mind is subject to determination like all other things. But the mind enjoys its own life and the causal interrelation of its states is enjoyed as *freedom* (ch. x.).

VI. Every finite is a part which subsists within Space-Time, and so far as it retains its own individual character it is accommodated or adapted to its surroundings in Space-Time. Such accommodation means the return of a separate thing out of its relative isolation into participation with the whole. In respect of minds, this adaptation to other minds which surround it and to the world of other things is the foundation of *values*—truth, goodness, beauty (as well as the special case of economic value). Unvalues—error, badness, ugliness—rest on the failure of adaptation and consequent impermanence of the thing in its evil form (ch. ix.).

These are some if not all<sup>1</sup> of the relations (whether internal or external) among things which arise from their belonging to the one Space-Time. They are not primary

<sup>1</sup> See later, ch. ix. F, p. 312, for a possible seventh problem.

categorical characters of things, for they presuppose the existence of things as empirical, that is as possessing quality. They arise out of the participation of things in Space-Time, and they are thus not empirical characters. They may be called derivative universal characters. Now it would be feasible, however difficult, to carry the inquiry further in detail along these general lines, and to exhibit in each case the corresponding features of mental life. But the procedure would be intolerably artificial. Already we have found it difficult to present the data without metaphors derived from human experience. In particular the last two problems, those of freedom and value, are almost unmeaning without prior reference to ourselves—the problem whether freedom is a unique privilege of man or, as will appear, a common feature of all finites when regarded from their own point of view; and the problem whether values are confined to us or have their analogues lower down in the scale. Accordingly in the statement of these last empirical problems I have been obliged barely to name the general grounds of the relations in question, without attempting to formulate it in such fulness as was possible with the other three, leaving the sequel to make the statement plausible. It is just because our minds are but one set of things amongst others, and at the same time are, in this connection at least, so much more familiar to us, that all the problems arise for us naturally in reference to our own experience, and traditionally are always so treated.

Accordingly I shall treat these problems, in what remains, as they present themselves in mind, leaving the reader to translate the results back into the simpler general form, and return hereafter, so far as may be necessary, to things in general. I shall thus expound the general relations in their illustration by mind. Moreover, while the treatment still remains of the nature of a sketch, it will be necessary to enter into some detail as to the nature of the mental life; partly because though in psychology and the sciences of values there is a large amount of results which are accepted, there is great doubt and disagreement as to the fundamental ideas of these

sciences—the middle propositions, as Bacon called them, are a vast and growing field, but the elementary conceptions are open to revision ; partly because the mind has not generally been regarded from the point of view of these general metaphysical problems ; partly also because I am much more familiar with the subject-matter of these than of the other sciences.

## CHAPTER IV

### MIND AND KNOWING

#### A. THE COGNITIVE RELATION

THE first and simplest relation between finite existences, under which name are included not merely things in the ordinary sense but components of them or aspects or parts of them, is their compresence within the one Space-Time of which all alike are differentiations. The behaviour of finites to one another in this relation of compresence is determined by the character of the finites. The plant lives, grows, and breathes, and twines around a stick. The material body resists, or falls, or sounds when struck, or emits light when touched by the sun. The mind knows. Mind is for us the highest order of finite empirical existent. A mind is the substantial continuum of certain processes which have the conscious quality. These processes are experienced in their continuity with one another, and are acts of the mind which is the substantial totality of them. They are identical with certain neural processes which the quality of consciousness or mind marks off from less highly fashioned vital processes ; and while they therefore have a distinctive rank of their own, and are experienced by the mind as mental processes and not immediately or directly as vital or physical ones, they constitute through their basis in life and matter, and ultimately in Space-Time itself, one set of existents in the general matrix. Whenever a mental process exists in compresence with some existent of a lower order, it is aware of that existent which

Cognition  
as an  
instance  
of com-  
presence.  
Problem I.

is its object. It experiences itself as an enjoyment, and it is compresent with its object which is contemplated. Let knowing stand for all kinds of apprehension of objects, whether sensation, or thought, or memory, or imagination, or any other. In the compresence of a mind with a lower finite, that is, a piece of Space-Time of a lower grade of quality, the mind in virtue of its conscious quality is aware or conscious *of* that object. It knows or has cognition of it. A and B are any two finites, which are therefore compresent with one another. Let A be a mind and B another finite, distinct from that mind and lower in order. Then A's compresence with B means that A is conscious of B. Cognition then, instead of being a unique relation, is nothing but an instance of the simplest and most universal of all relations.

The object contemplated, unlike the enjoyment, is some existent which is non-mental, some part of the whole world of Space-Time, but distinct and separate from the mind A or its act of apprehension. But according to circumstances the apprehension of the object takes different forms. The case of easiest comprehension is sensation. Let B be a patch or point of red and A, as before, the mind. B acts causally on the body of A and excites a mental process *a*, a process of vision, which for the present we may describe as a process appropriate to B; which means that the process would be different if B were a patch of blue or a hard surface or a sound. That is to say, while the processes in the different cases would have the identical quality of consciousness, they would differ in respect of their categorial features, in a manner to be considered hereafter. The two compresents are B and the mental process *a*, which may be called by anticipation an act of the mind A because it is continuous with the other mental processes which are united in the mental substance or thing A. B is here the sensum and *a* the act of sensing. The name sensation is unfortunately used sometimes for the sensing, sometimes for the sensum, and sometimes for the total situation, outside of which they never do as sensum and sensing exist. I cannot

hope to avoid following the bad example of common usage, but I shall endeavour not to do so except when the context leaves no room for misconception. Now such a relation as exists in sensing a sensum is strictly comparable with the relation of two compresent physical finites, like the floor and the table, which are in causal relation. The difference is that one of the finites here is not merely physical but mental as well, or rather it is mental for itself and physical as well.

But the compresent object does not always evoke the mental act by a causal action. When I imagine a red patch the mental act is evoked by some precedent mental act or perhaps merely by some stimulant of the brain, a pressure of blood or some chemical affection. Still an object B is now before the mind or compresent with it, that is to say, an object not compresent in sense so as to act causally upon A's sense organ but resembling one which has so acted on A in the past. When I have memory there is, as before explained,<sup>1</sup> the additional modification in the mental process and its compresent object which makes the object not simply a red patch but a red patch I have experienced before, that is, which belongs to *my* past. Thus the object compresent with my mental act being the object appropriate to it may be absent from my senses. Still it is distinct and separate from the mental act of imagining and the image or ideatum belongs somewhere in the world of Space-Time.

There is nothing in the relation of two material finites comparable with this situation. But a material thing is not alive and still less conscious. On the vital level and certainly before we have imagination or memory we have acts on the part of the living being which are anticipations of some external thing which is to complete or fulfil them. The plant grows towards the light. The hungry animal goes in pursuit of prey, without any forecast in consciousness, so far as we can judge, of what it wants. Its movements through the jungle

<sup>1</sup> Bk. I. ch. iv. vol. i. pp. 113 f.



are prompted by internal causes but are adapted or appropriate to the real prey which is there to be found. The currents which lowly organisms create in the water with their cilia bring food into the mouth, but without it would seem even the vaguest consciousness of any object, if we are even justified in attributing to a paramoecium consciousness at all. Thus on the one hand when the tiger sees and is conscious of the antelope, he jumps, but he also makes the preparatory movements appropriate to the finding of an antelope and then when one comes he jumps. The organism is so adapted to the world in which it lives that it not only is affected causally by it but from internal causes initiates actions adapted to the external reality. Even in ourselves we can detect these uneasy or restless movements which have no definite object (or at most we are conscious only of 'something or other' to which our movement is directed) but which yet are adapted to attain their real fulfilment, like strugglings to get rid of oppression in the lungs into a freer air, or the unquiet movements which attend adolescence.

To understand the significance of the objects of ideation we must refer to such movements as these, which are pre-adapted to real objects in the external world. Let the movements issue from mental acts, and the object to which that act is appropriate and of which we are conscious as an idea or ideatum is a non-mental one distinct from the mind. It may take many different forms: it may be a bare something or other; it may be an object 'such as' has been experienced in sensation before, like an imagination of breakfast; it may be a memory, that is an object of the past as it presents itself after the lapse of time, ready to be identified with a present percept of the same thing, as when we say this is the man I met yesterday. On the other hand, the object may have no actual existence, just as the tiger may be disappointed and find no food; or if he 'misjudge' the distance or be old, he may miss his kill like Akela in the *Jungle Book*; or it may not occur to sense in the same form as it exists to imagination, may be a sheer

illusion, a mere imagination. Yet, however unreal it may be, all the materials are in the non-mental world out of which it is built, or, to put the matter otherwise, reality provides the basis of the imaginary object. This will become clearer when we deal with illusion and error in detail. Always the mental movement is correlated with and adapted to some non-mental object, which has the characters of sensible experience (is spatio-temporal, has colour or life, etc.), as those characters appear in the image. There may be no golden mountain in reality but at least there are mountains and gold. It is the combination of mountain and gold which is fictitious, and yet a mountain must be of some rock or other, only perhaps not wholly of gold. Thus on the one hand a mental act has compresent with it the non-mental object, distinct from mind, which is appropriate to it. And on the other hand all our images are taken to be not only external but real or true until further experience shows us that there is no thing or substance to which they belong in the form they assume for us. From our side, all our objects, sensible or imaginary, claim to be real. Ideas are, in short, the aspects which things removed from our senses by distance of Space or Time wear to our mind owing to its capacity of dispensing with sensible presence; and this capacity carries with it the liability to create combinations which have no counterpart in that form in the real world.

Thus as no finite existent can affect our minds directly without evoking its appropriate conscious act, so no conscious act can exist without its appropriate external object in the spatio-temporal world.<sup>1</sup> Imagining an object is comparable to the physical act of turning round to see something behind our backs. Difficulties are left over to interpret in respect of mere imagination and error.<sup>2</sup> But we dare not take the difficult cases as our guide, and,

<sup>1</sup> In coming to recognise this principle I was much helped by a remark made by a speaker at a discussion in the Aristotelian Society.

<sup>2</sup> Below, chs. vii. p. 193, and viii. p. 215.

because we may err, declare that our objects alike in imagination and sensation are mental. We must begin with the plainer cases, those of sensation, where the non-mental object acts on the mind, and of veridical imagination, where we need only observe that the world is in Time as well as Space and we may be compresent therefore with objects removed from us in time or absent from our senses.

The link of connection between sensible and ideal non-mental existence which enables us to see that in both cases the object is equally a non-mental or physical reality is found in perception. There the mental process is part sensing, part ideation, and the object part sensed, part ideated. In the familiar phrase, half of our percepts are seen, half comes out of our heads. Yet the percept is one external object. The shifting phases of perception itself demonstrate this truth. I have seen and felt and smelt an orange at one and the same time. Later I see the orange, and its feel and fragrance are ideal; or I feel and smell it in the dark and its colour is compresent in idea. What was before a *sensum* has become *ideatum*, and what was before *ideatum* is now a *sensum*. *Ideata* and *sensa* declare themselves equally non-mental existences, with the same right to be recognised as such, by thus taking one another's places.

The cognition of objects is therefore a case of the compresence of two finites when one of these finites is a mind and the other one at a lower level of quality. A mind in any mental act or process is conscious of the appropriate object in so far as the act and the object which are appropriate to each other are in compresence, no matter how they are brought into this relation. The act of mind is the cognition, the object is the cognitum, the cognitive relation is the compresence between them. It is therefore only an ambiguity like that noticed in the case of sensation by which cognition itself, the mental act, is sometimes described as a relation. The relation is indicated in speech by the word *of*, which is the 'of' of reference in distinction from the 'of' of apposition used when we describe an enjoyment as the consciousness of

the mental process or act.<sup>1</sup> Such consciousness is identical with the act of mind, which is or constitutes the consciousness and is not its object. The object is some existent distinct from the act of mind. Moreover, while there can be no act of mind without its object, any more than a body can breathe without air, it remains to be seen whether the object does not exist in the absence of the mental act. Clearly it cannot be an *object* to a mind in the absence of mind, but does it owe its existence to the act of mind? The answer we shall see is that it does not; it exists or rather it may exist, as for example a *sensum*, in the absence of mind. These and other questions are deferred for the moment.

But, waiving further details, we have reached a broad general result. On the hypothesis that mind is one finite among others, albeit the highest in its empirical level of quality, we have found that the relation of cognition is what in the Introduction was declared to be the deliverance of direct experience; that in every act of cognition there are two separate entities or finites in compresence with each other, the one an enjoyment, the other what in relation to that enjoyment is a contemplated object. The enjoyment of the mind's self is at the same time the contemplation of an object distinct from it and non-mental. To know anything is to be along with it in Space-Time. Consciousness is indeed empirically unique, as being confined to a determinate order of empirical existents. But to be conscious *of* something else is not unique. It is the one term of the relation which has the unique flavour and not the relation itself. What direct experience, interpreted without the prejudice derived from some supposed singularity or privilege of mind, exhibits to the unprejudiced inquirer, has now

Comparison of this result with direct experience.

<sup>1</sup> Above, Introduction, vol. i. p. 12. The word *consciousness* is similarly ambiguous in ordinary language. I use it for the quality of the mental act or the mental act itself. But it often, perhaps most commonly, stands for the relation of the mind to its object. This usage is adopted by Mr. C. A. Strong in his recent *Origin of Consciousness* (London, 1918). It leads however to the inconvenient result, either that we are not conscious of our own minds, or else that our minds are objects to us.

been exhibited as a corollary from the simple proposition that all finites are related to one another by compresence. The mind does not stand above things and itself; but in being itself—enjoying itself in certain ways—it is conscious of or aware of or knows non-mental entities appropriate to its enjoyment. No one will, I trust, suppose that I imagine myself to have in this way demonstrated a proposition which was otherwise an unsupported statement of observation. I have only exhibited the same fact in its place in a scheme of interpretation, and this is the only demonstration of its truth which the circumstances admit. On the contrary, to pretend that it had been demonstrated would be manifestly circular. For the hypothesis that mind is one thing amongst other things in the empirical world of finites, though it does not presuppose the actual result that cognition is the compresence of a knowing enjoyment with a contemplated finite, does presuppose that there is no mind above both empirical mental acts and physical things to which they are both alike objects or, in the Lockean language, ideas. The interpretation of knowledge is therefore but an item in the system constructed on that hypothesis. Knowing is accounted for as the work of a purely empirical mind. The result of a theory confirms a simple result of inspection.

At the same time the outcome is more significant than this admission implies. For suppose we had assumed that there was something called mind which could survey things and its own acts, so that in a non-empirical sense not only mental acts but physical things were mind-dependent, a candid examination of these mental objects or ideas would have exhibited all the features we have described in the world of things. They would still be differentiations of Space-Time. The empirical mental acts as connected in the substance, mind, would still do all the work of what we are familiar with as knowing, and thus in the end the all-observing unique mind would be seen to be otiose. All which makes us thinking beings, all which gives colour and richness to our world of things, would be there as much in

the absence of this supposed unique mind as in its presence.

The consilience of the result of our hypothesis as applied to knowing with what we may learn by direct inspection of the cognitive experience at once indicates certain problems and helps us to shorten the inquiry by reference to the Introduction. Thus it follows at once that since the object is distinct from the enjoying mind, the mind can never be an object to itself in the same sense as physical things are objects to it. It experiences itself differently from them. It *is* itself and *refers* to them. All appearances to the contrary rest upon a mistake of analysis. Thus I may at this moment have in my mind the memory of how I felt on some past occasion. But I do not make that memory of myself an object. It is a partial enjoyment linked up with my present enjoyment (also partial) of myself. Just as I contemplate some aspect of a physical object, say its past condition, as a portion of its whole history, so I enjoy a partial condition of my enjoyed substance, my mind, along with the rest of the enjoyments which as linked together and contained within my own enjoyed space-time constitute myself as enjoyed. The arrival of reinforcements was the reason why the enemy was overpowered; here is a fact of the external world included in a larger complex of external fact. Seeing my friend reminds me of how I used in former years to rejoice in his society; here is an enjoyed fact included in a more comprehensive enjoyed fact.

Introspection has already been discussed.<sup>1</sup> I do not in introspection turn my mind upon itself and convert a part of myself into an object. I do but report more distinctly my condition of enjoyment. A mind which broods over itself in dangerous practical introspection abandons itself to the enjoyment of itself because of the subjective interest of that employment. Introspection for psychological purposes is enjoyment lived through with a scientific interest, and introspective psychology is the more

<sup>1</sup> Introduction, vol. i. pp. 17 ff.

Mind never  
an object  
to itself.

accurate report of our mental acts than we need for the practical purposes of life. Most introspection is indeed retrospection and has been thought therefore to be obviously a case of self-objectifying. But it is in fact, as just before observed, enjoying or re-living our past. The reason why we use retrospection so much is that in memory the enjoyed condition is free from those practical urgencies of the present moment which take our attention from ourselves and turn it on to the object with which we are concerned and make the accurate record of what we are enjoying difficult or impossible. On the other hand it is a sheer mistake to suppose that it is by introspection that we know the images with which we are conversant in imagination or the objects which we remember as the objects of our remembered mental acts. The image of a tree is no more examined by introspection than the perceived tree. Both are objects of extrospection. It is only the act of imagining which we can introspect. Still less do we introspect when we observe our bodily condition in the organic or kin-aesthetic sensations. These *sensa* are objects to the mind, not enjoyments, and, as will be seen hereafter, are non-mental like colours or figures in external space. Thus introspection may be called observation but observation is not necessarily the observation of external objects.<sup>1</sup>

The select-  
iveness of  
mind.  
Problem  
III.

The mere compresence of a finite existent with the mind accounts for the mind's consciousness of that object. The object and the corresponding mental act vary together, and to every difference in the one there is a corresponding difference in the other, not in respect of the quality of consciousness but in respect of its categorial characters. But not only are finites compresent with each other but they are related to each other selectively. Applied to the special case of relation between physical finites and a mind, this proposition means that the objects of which the mind is conscious are partial revelations to the mind

<sup>1</sup> In the above I am necessarily repeating in a shorter form the remarks of the Introduction.

of things.<sup>1</sup> This was also the deliverance of our inspection of experience when to simple inspection is added reflection on the results of many connected experiences.

Things are, on our hypothesis, pieces of Space-Time within which are contained those movements and that configuration or pattern of their combination, which are the phases of the history of the things and the universal character which the things possess. According to the condition of mind, into which it is thrown by a thing or in which for other reasons it happens to be in respect of the thing, the object of the mind will be a different partial aspect or feature of the thing. I may see an orange as a patch of colour but may be too far off to smell it. I may see a flower but may for lack of interest fail to count the number of its leaves. I may perceive it but at best I only perceive it partially. Or the thing may be compresent with me as that object which is the image of it, or the thought or general plan of its construction, or the memory of it as I saw it yesterday. The mind enjoys itself at any moment only partially; equally the things which it contemplates are contemplated selectively as partial objects. In common language, we are said to apprehend the thing of which we are aware only in the partial aspect or feature which the mind has selected. Thus we are said to see the orange and not merely the patch of yellow colour of a certain shape, which is, strictly speaking, all that we apprehend in vision. We do so because many experiences of the thing, called orange, are synthesised in our mind in the course of our experience, that is, we become aware of them as all contained within the volume of space-time which is the substance of the thing.

The object before our mind is nothing but the finite and distinct existent which we apprehend with the

<sup>1</sup> The distinction of an object from a thing as being a partial apprehension of the thing is the same I believe as is drawn by Mr. H. Barker in his contribution to a symposium in *Proc. Arist. Soc.*, 1912-13, N.S. vol. iii. 'Can there be anything obscure or implicit in a mental state?' p. 258.



character which it bears upon its face—its face value—a coloured patch, a smell, an imaged orange, a thought orange, a colour qualified by a touch which is revived in idea. Experience enables us to connect all these objects together and be aware of them in their combination as belonging to the thing to which they all in some sense belong. We then say or can say that the orange reveals itself under the form of these different objects. The synthesis or combination spoken of is not to be understood as a creative procedure on the part of the mind, except where the mind creates, as in imagination, a combination not presented in nature. The synthesis is the union in the thing cognised of the various special features of it which have been cognised piecemeal, and whose substantial coherence the mind comes in experience to recognise. The clearest instance of such contemplated synthesis is found in perception where *sensa* are contemplated by the mind as combined with ideal elements. The act of perceiving is a synthetic enjoyment; the perceived object or thing, the *perceptum*, is a contemplated synthesis, which as will be seen is founded on the reference of the separate elements of sense and idea to the same bit of Space-Time.

Things and  
objects.

We have therefore to distinguish between objects which are the finite existents revealed to mind in any act of mind and those groupings of objects within a certain spatio-temporal contour which are known as things. Sometimes the distinction is called that of the contents of mind and the objects respectively, but, for certain reasons already touched on and to be explained more fully, this usage seems to me undesirable and entirely confusing. Now in the simpler cases, there is no difficulty in the proposition that a thing, described as the space-time which exhibits at any moment and from moment to moment different features united in a substantial unity, contains these partial features, and that they are selected by the mind according to circumstances, the selection being understood not as necessarily an active one, as when it is prompted by a purpose, but as varying

from passive acceptance or affection upwards to fully active selection. The orange contains its colour and smell and shape. Nor is there any real difficulty in maintaining that the *sensum* orange-colour being distinct from the sensation of it and being a movement within the thing, with the yellow quality, exists in the absence of any percipient. When the percipient is there the orange is revealed to him as this patch of yellow colour. Nor in maintaining that the remembered orange, if only the remembering be free from falsification, is actually contained in the history of the orange, and is in the same sense the orange revealed to memory after the lapse of time.

But the selectiveness of mind extends further than these simple cases. For not only does the mind falsify by the introduction of objects which do not belong to the thing; that is to say, being in a certain condition it apprehends in the object elements corresponding to that condition, which it may thus be said to impute to the object; but according to the nature of the mind and its mere position in space and time, things wear to the mind varying appearances. The colours may look different with distance, or with colour blindness in the percipient. Even the spatial form varies, as in the varying appearances of the penny when it is seen from the front or sideways or end on. The question then arises, and it is a different one from the present, which of the varying appearances of things, which objects presented to the mind, belong really to the thing; the question, not of the non-mental character of objects but of their reality or truth. It is the misfortune of a systematic exposition that it cannot answer all things at once, and this question must be delayed till its proper place. We must, however, follow the safe rule of beginning with the simpler facts and accounting later for the complex ones. But while we can, if our hypothesis of the nature of things or substances be correct, affirm that a thing is a combination of certain objects which it reveals to mind, we can also safely at this stage affirm that it is the foundation of all of them. Later on we shall see that, like the bent staff apprehended in water, the variable appearances of things which seem

not to be contained so obviously in them as the colour and smell in an orange, are appearances of the thing not taken by itself but along with some other thing or circumstance.

The partial revelation of a thing to mind in the form of objects which belong to the thing merely means in the end that no object, nor even a thing, is given alone, but, because it is a part of Space-Time, coheres in varying degrees of closeness with other objects and groups of such objects connected together by the categorial relation of substance, that is, belonging to the same volume of space-time. The thing which is partially revealed in its objects, whether of sense or memory or thinking or imagination, is thus of the same kind of existence as the objects themselves. One object may suggest the others which participate with it in the one substance: that is, it means the others and may be said, though only loosely, to refer to them. Moreover, no object is apprehended except as being the whole or a part of the space-time which contains them all. Thus even the patch of yellow is seen extended over the space which is part of the orange. No object therefore is apprehended by itself but points to other finites as well. It is spread over the space which is apprehended with it.<sup>1</sup> But the space and time in which it is contained and the other objects which it suggests in virtue of experience are all of them on the same footing as regards the mind which apprehends them. In the act of knowing the mind *refers to* its object as something non-mental, and it may and does refer to that object as part of a larger whole which is also included under the general name of object. There is thus no thing which lives as it were behind the objects which reveal it, no thing-in-itself which is itself unrevealed except through these partial objects. If the objects are physical, so is the thing.

It is because the mind selects (actively or passively) from the total thing parts of it, which it contains or of

<sup>1</sup> The space it is apprehended as spread over is the perspective from the percipient's point of view of the space occupied by the thing. See later, ch. vii. pp. 192 ff.

which it is the foundation, that the objects of mind are thought to owe their *esse* to their *percipi*. All that they owe to the mind is their selection, that is their *percipi*. But their *esse*, their existence and their qualities, they have as being finite existences in Space-Time, and thus non-mental. Were it not for the selecting mind they would not be noticed, and would not be objects to a subject. But they do not owe to the subject their being but only their being apprehended by the subject. They exist apart from the subject before the subject can select them for contemplation, always under the proviso that the subject selects them truly without introducing extraneous material also non-mental. And so far as they are there, and in the form in which they are there, they are there whether they are contemplated by a mind or not.

Agreeable as this result, derived from a consideration of the general relation of selectiveness of finites to one another, is to what we learn from simple inspection of experience helped out by reflection on the history and varieties of experience; it contradicts a doctrine supported by high authorities (like Mr. Stout and the late O. Külpe<sup>1</sup>), that objects or, as they are then called, presentations point beyond themselves to a source or ground, and are immediately apprehended as pointing or referring to that ground. The presentations are our guide to the nature of the ground or condition of them. Thus, since the source or condition is given with the presentation or object, it must be said to be given in experience. But at any rate that experience is on this showing of a different order from the experience of the presentation or object. Sometimes it is said that it is thought which informs us or refers us to the thing (which may include the whole of reality) which conditions the presentation. Thus, to take a simple sense-datum, it is rightly held that if the mind is aware only of its own sensations, it could not transcend them so as to know independently existing things. Consequently, to quote

Alleged  
reference in  
cognition  
to some-  
thing  
behind pre-  
sentation.

<sup>1</sup> *Die Realisierung*, Bd. i. (Leipzig, 1912).

Mr. Stout,<sup>1</sup> "we must assume that the simplest datum of sense-perception from which the cognition of an external world can develop consists not merely in a sensuous presentation, but in a sensuous presentation apprehended as conditioned by something other than itself." It is not easy to discuss this doctrine shortly with fairness, especially apart from the consideration of the variability of sense-appearances which we have deferred. But I am more anxious to point out what is its relation to my own result, and what are the really true considerations which, as I think, it presents in a mistaken form.

In the first place, if we are said in sensuous presentation to be aware of or to refer to something not a presentation which conditions it, the thought in question is not the thinking which is concerned with universals or concepts. Strictly speaking, though I do not think this has always been admitted, concepts should be in the same category with presentations and should be like them real appearances of the source or thing which conditions presentations. Such they obviously are for me, since they are, as configurations of space-time, *in pari materia* with sensa or images or percepta. The difference of the two senses of thought is made clear by Mr. Külpe when he insists that the thoughts we think are to be distinguished from the things we think of, for we may think not only of universals but of particulars or even of a sensation.<sup>2</sup> This statement is greatly to be welcomed, for it clears the way to an understanding of the real issue. The thought which tells us of a thing or condition or source different from the presentation but revealed by it is the experience in the mind of a reference to something not the mind. In the same way, to revert to a distinction indicated before, the meaning of a word may be either the ideas which it conveys, that is the facts which are contained in its logical intension, or it may be the actual things to which the word is applied—its extension. I may mean the prisoner, where meaning is the intellectual substitute for pointing to him; or meaning may be what is

<sup>1</sup> *Manual of Psychology* (London, 1913, ed. 3), p. 432.

<sup>2</sup> *Loc. cit.* pp. 82 ff.

suggested by a word or a symbol or any part of a complex which leads on continuously to the rest of it, as the first words of a line mean for me the rest. Now, so far as thought is the act of reference to something not in the mind itself, undoubtedly we can have no act of mind without such reference. The experience that we have of referring to something non-mental is the experience (and I have shown before that it is experienced in enjoyment) that we are compresent with an object distinct from ourselves. If we call this experience an act of thought, every experience contains a thought-reference to something distinct from our enjoyment. This is the essence of our own result.

But for us the reference is to the object, that is to the presentation itself; for the theory under consideration the reference is to something beyond and behind it. For that theory the presentation is still psychical though it is the revelation of its underlying ground or condition. Though it is not subjective like the feeling of interest it is yet psychical. In a later paper Mr. Stout has compared the relation of the sensible to its condition with that of an image of a sensible like a black mark to the sensible itself. "In the very act of directly apprehending the image I think of or remember the sensible itself. I am not merely cognisant of the image but cognisant of it as standing in a peculiar relation to the previous existence of the primary sensible."<sup>1</sup> This analogy is very instructive for the purpose of understanding the theory, but it appears to me to be a misstatement of the experience of remembering the original sensible.<sup>2</sup> What I have in my mind is the image of the black patch, that is, is a black patch more or less blurred in the way in which images differ from percepts, and along with that the note of pastness and that warmth or intimacy of connection with myself which assures me that it belongs to my past. This is all that I can find in the remembering act, and this is the experience of having had a thing before me

<sup>1</sup> *Proc. Arist. Soc.*, 1913-14, N.S. vol. xiv. (Symposium: 'The Status of Sense-Data'), p. 384.

<sup>2</sup> Above, Bk. I. ch. iv. vol. i. pp. 113 ff.



in the past. The original sensible is not in my mind at all. But if I again see it I can identify the black mark as what I remembered a moment before. It is some such other experience which has been imported into the experience of the memory image when it is alleged that that image actually refers to the sensible. If the sensible had been in the mind at the time there would not have been a mere memory but a recognition. But if it was not how could it be referred to? We have therefore a mistaken description of memory in which something known *about* the object is imported into the actual object of acquaintance. It may be added that we may have an image of a black patch without any memory at all, and here it is still clearer that if we say we refer to a sensible of the same sort we are not construing our experience as we have it but importing something else into it which is known from a different experience.

Based as it appears to be on some such misapprehension, the whole statement that in presentation we refer to its condition is open to the old objection brought against the Lockean doctrine, which it resembles, that our ideas are copies of their originals. How can experience warrant a reference to this something conditioning presentation which we never have experienced and which is only a symbol for the non-mental? For this condition is not in the same case with the vague 'something or other' which we have often referred to as playing so large a part in our experience. That vague something is merely an object awaiting further definition. But the supposed condition of presentation cannot be further known for it is not known at all. I do not merely mean that it is not known explicitly; that is irrelevant. It stands not for anything experienced or any part of such but merely for a postulate that although the presentation is psychical it must be brought into relation with external reality.

I am compelled therefore to conclude that the doctrine is a misstatement of either of two things which are both true. Either it stands for the truth that every mental act does refer as such to a non-mental object, in which case the object ceases to be a mere presentation and the

reference is to the object itself. Or it stands for the truth that any object of mind points to or means other objects combined with it in the spatio-temporal unity of the thing and that any mental object is from the beginning spatio-temporal and implies a piece of Space-Time within which it belongs and which is apprehended, as we shall see, not by sensuous experience but by a simpler experience still. Even a sensum like blue is never mere blue but a patch of space-time filled with that quality. This space-time in which all the qualities are contained is the identifiable element in experience which is probably intended when presentations are said to imply a ground which is not mere presentation. But this space-time in which a colour is found is part of the presentation itself. There is thus no reason to look for grounds behind or beyond objects or presentations. The object is itself a space-time occupied with movements apprehended not as movements but in their qualities. All that we need to do is to distinguish between the apprehension of the quality as quality and the apprehension of the space-time which it occupies. This distinction is indeed of the last importance, but it is not the distinction of a presentation and its ground or condition.

Certain features of the mind's selectiveness remain to be described. A minor aspect of it is the following. Every finite is compresent with all other finites, being part of the one Space-Time. But a finite A is not necessarily compresent with a percipient finite B in respect of the distinctive character of B. Thus let B be a mind. A is compresent with the mind B only so far as it can evoke an act of B as such, or in any way corresponds to such an act. Thus I do not see a thing behind my back; though if I have reason for doing so I may imagine it or think of it there. In the second case it is compresent with my mind; in the first it is not compresent with me as a mind. On the other hand it is still compresent with me, in so far as I have a body, for it attracts me, or at the very lowest it is compresent with me as a portion of Space-Time. Behind my back

Aspects of  
selective-  
ness.



it evokes no mental response, for I am not, under those conditions, susceptible to it. But since my mind is also a living material spatio-temporal thing, it never fails to be compresent with me in some capacity of me. Thus I may not be conscious of all the things which I have the means on appropriate occasions of perceiving. But the complementary proposition is also true that there may be qualities in the world of things below me in order of quality, which I may not be able to apprehend in that form at all (though I can apprehend them in their spatio-temporal character), because my body does not possess the appropriate organs. Thus our senses do not necessarily exhaust the sensible qualities of things. Colour is revealed to me because I have eyes, while it is not revealed to the plant as colour but only as something which affects the chlorophyll in the plant. Or I hear the sound of the tuning-fork, but the sound may be revealed to a tuning-fork which it sets in sympathetic vibration only as a vibratory material affection of the source of the sound.

There is a more important aspect of the matter. Mind is selective (like any other finite) in the sense that it singles out for its special reference the object it is compresent with. But every object is connected with other objects, with some more closely than others, and being a piece of Space-Time it always is surrounded by the rest. The object is but a salient feature in a mass of which the mind is conscious in various degrees of distinctness. Some of them are united with the object of attention within its piece of Space-Time. Some of them are qualified objects in the remainder of the medium, and always there is at the extreme margin the suggestion of a beyond, 'something or other' which is really there and which is present to us in the feeling we have of what we afterwards call, in the language of reflection, the finitude of all we distinctly apprehend. On the side of the enjoyment, too, we never have the single act appropriate to the object, but an act linked up with other acts, themselves distinct or indistinct as the case may be. To be aware of a thing and enjoy the contemplation of it is also to be aware of or enjoy ourselves as substantial, so that the Cartesian 'I

think therefore I am' is true not in the sense of an I unlike in kind to its acts but of an I which is their substantial unity. The connected enjoyments may be as in ordinary perception distinct, but around our enjoyment of the largest tract of nature or of thought there is still the vague mental functioning, which is our apprehension of the infinitude of things not ourselves. Our definite and particularised enjoyment is a fragment from this larger mass, as its object is a fragment from the infinite world, which includes the external world and our enjoyment as well. It is indeed only so far as we recognise ourselves as part of the one whole, enjoyed in a smaller part, contemplated for the rest, that our vague sense arises of our finitude, our sense of stretching out in enjoyment beyond our own limited portion of Space-Time which we enjoy; only so far, that is, as our enjoyed space-time is realised as part of and continuous with the whole of contemplated Space-Time, that we realise what the vague sense of something beyond means, and can express in the language of thought the experience that things and ourselves do not merely make up by aggregation the infinite whole but are detached portions of it, which betray their dependence on and continuity with it by the feelers which they put out to grasp it. It is the consciousness of our finitude and of the finitude of things which has led some to declare that we see all things as in God; and it is one natural spring of the religious sentiment. At any rate it is as much a fact of our experience (and a fact of reality independent of our experiencing of it) as the more pungent and practical experiences of our daily intercourse with finite things, and ourselves, and one another. To leave these further speculations, it is doubtless this feature of our experience which makes some writers say, like Mr. Bosanquet,<sup>1</sup> that mind envelops the whole world like an atmosphere. It is not true as these writers think that minds which are but one set of empirical finites are in a peculiar sense connected with the universe, they only

<sup>1</sup> B. Bosanquet, *The Distinction between Mind and its Objects* (Manchester, 1913, Adamson Lecture), p. 27. Compare the present writer's 'Basis of Realism' (*Proc. British Academy*, vol. vi.), section 7.

know more of it and in greater wealth of colouring than inferior finites. But it is true that our enjoyments expand in correspondence with our objects, as we pass from a small room to a large one, to take a trivial illustration, and that our mind pursuing this process takes in the whole, summarising the indistinct fringes of its own enjoyments and of the world of external things, in the thought of an infinite. The infinite then is, however apprehended, prior for the common mind to the finite as it was declared to be by Descartes and his successors.

Corollaries:  
(1) Various  
kinds  
of com-  
presence.

Certain corollaries may be noted which confirm the results of simple inspection. One has been already described in the Introduction. Compresence is the most elementary of all relations, and all that knowing as such implies is the compresence of a mind and an object at a lower level. The mind and the object are but two existents amongst others, or if we designate the enjoyed by capital and the contemplated by small letters, it is the compresence of *A* and *b*. But the relation of compresence between *A* and *b* also obtains between two physical objects *a* and *b* and between two mental enjoyments *A* and *B*. It goes without saying that if *ab* is known or contemplated there is a corresponding enjoyment *AB*, and if *AB* is enjoyed there is a corresponding object *ab*.

This is no more than an elaboration of the central proposition. What we specially need to note is that a thing which is enjoyed and one which is contemplated may stand in the same categorial relation to each other as two things both of which are contemplated or both of which are enjoyed. An enjoyed existence is a real existence and its nature is not affected by its being enjoyed in relation to an object contemplated. In other words, the complexes *Ab*, *ab*, and *AB* are on precisely the same categorial footing. The only difference is in the character of the existences involved. When in a relation *ab* one of the terms is changed to *A*, the relation of causality between *b* and *a* may still be a relation of causality between *b* and *A*: *A* then is an existence

which enjoys itself, being a mind, and it knows *b*. Thus the relation of the mind to its object *b* the table is precisely of the same order as that between the floor and the table. Only the floor is not conscious, and consequently is only affected by the table so far as it can be.

From this we can pass back to consider lower levels of existence than mind, seeing that knowing is nothing but the empirical form which compresence assumes when one of the partners has the empirical quality of consciousness. The same relation as exists in knowing an object exists as between any existent and any other which is on a lower empirical level. Just as objects are to our mind revelations, partial revelations, of the thing from which the object is selected; so to life, to a living existence, things are revealed in their material characters, and to a material thing things are revealed in their primary characters. How much of what belongs to the lower level shall be revealed to the level above it depends on the 'susceptibilities' of the higher existent, on the machinery it possesses for accepting what is revealed, on its 'organs.' Thus the secondary qualities of matter are lower than life, but it does not follow that a plant must be aware of colour as colour. It has no sense-organ appropriate. Yet in so far as light affects the plant the plant has the revelation of light so far as that is possible, though in what form I find it difficult to say. In the same way a man may be partially colour-blind and see no difference between red and green; or totally colour-blind and see no colours at all but greys; or tone deaf, and the like.

It is almost impossible to speak of the relations between lower levels of existence except in terms of mind, which though the highest empirical finite existent is only one finite amongst others and illustrates something in the relation of finites which is universal and not peculiar to mind. Let us then use 'knowing' in an extended sense for the relation between any finite and those of a lower empirical order, and let us describe the empirical quality of any kind of finite which performs to it the

(2) Extension to lower levels.

office of consciousness or mind as its 'mind.' Yet at the same time let us remember that the 'mind' of a living thing is not conscious mind but is life, and has not the empirical character of consciousness at all, and that life is not merely a lower degree of mind or consciousness, but something different. We are using 'mind' metaphorically by transference from real minds and applying it to the finites on each level in virtue of their distinctive quality; down to Space-Time itself whose existent complexes of bare space-time have for their mind bare time in its empirical variations.

Using then the terms appropriate to mind in this metaphorical fashion we may say that any finite 'enjoys' itself and 'contemplates' lower finites or has 'knowledge' of them. They are revealed to it so far forth as it has organs for apprehending them. Hence properties which belong to the lower finite may be unrevealed in their distinctive quality, but they are revealed in the character which belongs to their equivalents on a lower level still. Thus in my example of the floor and table the floor certainly does not 'know' the table as exerting pressure, it does not even know it as material (I return to this presently), but in some lower equivalent form as a persisting set of motions, as, say, accelerated towards it according to the gravitational law. At the same time each finite is related towards other finites of the same level as minds are related to one another. The material floor is *assured* of the materiality of the table.

Thus each level has its specific 'enjoyment,' and what it 'contemplates' is what from the nature of the case can be revealed to it, and so far forth as it can be revealed. We might have started with a hypothesis as to lower levels in this fashion and then treated mind as a special case. But the hypothesis would have assumed the analysis for mental knowing and would have been pedantic and unprofitable.

A third conclusion, which is of less importance in itself than as illustrating the meaning of the relation of knowing, is the following. A higher order of existent than mind, whether conceived as finite, what I have

(3) Higher existents than mind.

called an angel, or as an infinite God, would contemplate consciousness as consciousness contemplates qualities of a lower order. Consciousness enjoys itself in us, but for the angel it would not be enjoyed but contemplated. For such a being there would be no doubt that the relation of mind to its object is only an example of the relation of any other finite to a second finite; and the notion that things depended on the mind except for the selection from them of the mental object would to him sound as extravagant, as it would sound to us if the tree should plead that the soil it lives in depended on the tree for its existence or its character. Just as the tree selects from the soil what it requires for its nutrition, and in growing reacts to the nutritive elements of its soil, so for the angel's contemplation mind selects what can feed it in the things which surround it and these are its objects to which it reacts in the conations whose purely speculative character is cognition. More precisely consciousness is contemplated by an angel in the way in which life which is next lower to us is contemplated by us; that is, it is known for him in the first instance as the consciousness which belongs to his, the angel's, own 'body,' whatever that body is. We also know life first in ourselves; and the further description of our knowledge of life outside our own body is left to a subsequent chapter.<sup>1</sup>

This leads us to a final point which is of great importance. The plant selects from the soil; but the phosphates are already there, and it does not make them. Mind is equally a reaction to external things and what it selects for its object is present in the thing or in some other part of the universe. So far is the object from being dependent on the mind that, on the contrary, the mind is, at any rate for its original material, dependent on the object; just as the silver must exist before it can be used as a shilling and be impressed with the king's effigy. Thus the higher grade of finites grows out of the lower and enjoying itself contemplates the lower in turn. Hence although mind cannot be and act without

(4) The object not dependent on the mind.

<sup>1</sup> Below, ch. vi. pp. 174 ff.

things from which to select its objects, neither the things nor the objects are affected in themselves by the presence of mind except so far as the mental conation alters them. What they are before the practical and alterative action takes place does not depend on the mind. So far as it is purely cognitive such alterative action is suspended. It follows that though for mind things are a condition, the presence of mind is not a condition of the existence or quality of things. All that they owe to mind is their being known. It follows that even *sensa* exist in the absence of mine or any mind, much more things of which *sensa* are only passing acts. The actual things and their acts which are called *sensa* because we sense them are irrespective of our mind, since they were before there were minds. The gleam of colour and the act of pressure are not noticed in their quality till there are beings with the appropriate apprehensive machinery. But they exist in their native qualities, some of which possibly even we do not perceive. Nor would there be any difficulty in realising this truth were it not for the interference of our minds with its objects and the interference of one object with another, which have yet to be considered. That difficulty may then as I hope be removed.

## B. MIND AND BODY

Consciousness has been treated in the above in accordance with a previous chapter as the quality of certain neural processes, and the conscious process as identical with the neural one. But neural processes or mental ones, being conations, issue in certain changes or movements of the muscles and viscera, by the first of which the organism reacts on the stimulating object. We have now to consider what part is played in the act of knowing by these 'somatic' reactions and generally by the body as distinguished from the central nervous system. The mental partner in the cognitive transaction enjoys itself as a conscious process, and consciousness is in fact the enjoyed innervation of the appropriate neural process. It is the enjoyed beginning of a process which terminates in somatic changes. It might be thought that such enjoyment introduces once more the alleged sense of innervation felt by us as a sense of discharge of nervous energy, when we will a bodily movement. The alleged sense of innervation so interpreted has been discredited. But the enjoyment of which I speak resembles it only superficially. For the 'sense of innervation' was believed to be a sensation, only a central not a peripheral one, and unlike all other forms of sensation. For us the enjoyment is not a sensation at all in that meaning of the term 'sensation.' In the sensation of colour there are two partners; one is the *sensum* colour, the other is the act of sensing it which is an enjoyment wherein we contemplate the colour. The sensing is the beginning of the process which issues in certain movements of the eyes or other movements, and may be said to be the enjoyed innervation of the neural process which ends thus. In a motor sensation, the *sensum* is the movement of the muscles, and the sensing is the enjoyed innervation,

Experience  
of the body  
in knowing.



principally that which proceeds from the kinaesthetic centre, wherein we become conscious of a muscular movement when it has been performed. For it is agreed that muscular changes are sensed like visceral ones or objects of the special senses, as the stimuli which provoke the consciousness of them. Part of the difficulty in understanding the nature of knowing is this misunderstanding which confuses an enjoyment which is properly described as an enjoyed innervation with the so-called sense of innervation.

Bodily changes, whether visceral or muscular, are always contemplated ones or objects, and the awareness of them always accompanies the awareness of an external object. When I see a colour I have, besides the enjoyment of seeing and the colour itself compresent with it, the contemplation also of movements in the eye, or other connected movements. It is in fact through such movements as those of the eyes when I turn to the light or fixate it that I become aware of my eyes and the colour as two physical objects in relation to one another in the physical world. I must have my eyes open to see at all, and accommodate them or converge them in order to see in certain places, and more than that, the colour is revealed to me in the act which issues in these or other movements. But the contemplation of the outward reaction of seeing is a different mental act from the consciousness of the colour and succeeds it. The movements of the eyes issue from the seeing conation, and then are apprehended in a motor or kinaesthetic conation whose neural process and equivalent enjoyment are distinct from that of seeing.

It is not only sensory processes which are thus accompanied by the added consciousness of motor and visceral changes. In all experiences, however much they involve ideas, we have these secondary acts of contemplation of the somatic issues of the primary consciousness. Imagining a man issues in certain movements which may be actual, or if only anticipated in idea always tend to be actual, that is to be such movements as would actually occur if the imagined object were present. Sometimes they are movements, say of the eyes, round the contour

of the object, sometimes they may be movements of speech, and there are indeed psychologists who regard speech as the distinctive somatic issue of imaging. It is the same with remembering and thinking, thinking being in a special manner the beginning of speech. Whenever I am said to make myself an object of mind, it is never the self as subject, the mind, which I make an object—it can only be enjoyed; it is always the bodily part of the person which is thus made into an object, whether perceived or imagined. In remembering my past state of myself, what I contemplate in the past is my body as it was when the remembered event occurred; my remembered state of mind or enjoyment is not contemplated but enjoyed, and as we have seen enjoyed in the past.

Thus in the transaction called knowing the partners are on the one side the neural act with its quality of consciousness or mind, on the other the object of which the mind is conscious in this act; the bodily or somatic element in the transaction is incidental or sustains the primary transaction; as the processes of fixation of attention sustain the attention. The mental response is what we have called an enjoyment, meaning by it that when we see a colour we are conscious of the colour or are aware of ourselves as seeing it. If, as observed already in the Introduction,<sup>1</sup> in order to understand enjoyment we seek for something which can be an object to us like hunger or thirst, or even pleasure and pain, we can find nothing such in our experience, and because we do not look in the right direction we may declare that enjoyment, or an act of consciousness, is a fiction. Those who do so look at their mind from the outside and do not, as it were, put themselves into the place of their own minds.

But I have now to take account of a view of the transaction of knowing to which the present one is in general spirit closely allied, but which dispenses with or rejects the notion of consciousness as a quality carried by

The search-light view of knowing.

<sup>1</sup> Vol. i. p. 20.

the neural responses to the outside world—a view which, if it can be justified, is vastly simpler. It goes in psychology along with the method of ‘behaviourism’ which rejects introspection as a primary method. We are concerned with its metaphysical conceptions, which have been set out recently in their extreme form by Mr. E. B. Holt.<sup>1</sup> According to this view we have the environing world of things provoking specific<sup>2</sup> neural responses, and these responses select from the environment those portions or aspects of it to which they correspond. Whether the objects are sensations or memories or imaginations or thoughts or even volitions, the case is the same. These are all of them portions of a mass of objects selected by the neural response itself from the world. The neural response is therefore compared to a searchlight which illuminates a certain portion of the outside world; or with a variation of the metaphor it is said to determine a cross-section of the world, as though the neural response acted like a plane which should cut the world across and lay bare a certain surface. On the one side is the neural organism with its response, which is the cross-section of the organism by the plane; on the other the cross-section of its environment. The total cross-section of the environment is consciousness or the mind, and its parts are, in relation to the whole, sensations, memories, and the like. This is the transaction of knowing. There is no consciousness lodged, as I have supposed, in the organism as a quality of the neural response; consciousness belongs to the totality of objects, of what are commonly called the objects of consciousness or the field of consciousness. Consciousness is therefore “out there” where the objects are, by a new version of Berkeleyanism. The objects and the totality of them are, it may be added, determinations of a neutral stuff which is not Space-Time, but into the nature of which I need not enter. Obviously for this doctrine

<sup>1</sup> E. B. Holt, *The Concept of Consciousness* (London, 1914).

<sup>2</sup> What is meant by a specific response is best understood from an illustration which is Mr. Holt's own. A plant responds to the sun, but its specific response is not to the sun as sun but merely to his light.

as for mine there is no mental object as distinct from a physical object: the image of a tree is a tree in an appropriate form.

The knower is thus the cross-section, of which the nervous system is the mere machinery. Strange as the doctrine may seem, it is in reality so simple as almost to compel assent. There is no need in it for enjoyment, and all the difficulties of that conception are avoided. Compared with its account of remembering and expecting, the account which I have given of the nature of remembering and how we enjoy ourselves in the past and future, seems to myself intolerably complex. No one who feels inclined to dismiss this searchlight doctrine as impossible and does not rather find it natural, or who differs from it without misgiving, can be said to have faced the real problem presented by knowing. Take the sight of a colour or a fire. Strip yourself of the notion that the colour is in any sense a creation of the mind though selected by it, realise that the red is just what it shows itself to be and that there is no such element as our consciousness which enters into its constitution; and then ask yourself whether in knowing red there is anything more or less than the fact that the neural response has selected red from the universe of things, and whether the sight of red means anything more than that this red is included in the whole cross-section of objects which is consciousness or mind itself.

If I am unable to accept a doctrine which goes beyond my own but is so simple and apparently so close to facts, and to which I find myself perpetually being drawn back and persuaded to adopt it, I am bound to state the reason why. It is that the doctrine fails to account for a vital feature in the cognitive situation, as we experience it, namely, that in being aware of the fire, the fire is before *me*, or it is *I* who see it, or it is in a sense *my* fire. This is easy to understand if the response to the fire is an act of consciousness, for then not only is there a fire, but the response is not merely something which is there alongside the fire which it selects as its object and so is for itself, but something which experiences itself. For every act of

Its short-coming.

consciousness is then self-consciousness, not in the sense of containing a reflection on itself, for this is just what is denied by calling it an enjoyment, but in the sense that whenever we know, we know that we know, or that knowing and knowing that we know are one and the same thing. Now if consciousness belongs not to the neural response but to the cross-section itself which it makes, as a totality, how can any object be *my* object? And yet experience says that it is.

The only possible answer that I can see is that the self for which the fire is my fire is my body as presented to me in organic and motor and other sensations. This is always a part of the total cross-section at any moment, and it remains the permanent centre of reference, within the total which is consciousness, to which the other details of the cross-section may be said to belong. There is red, and there is a body, and both are contained within the mind or are parts of consciousness. Moreover, the colour depends on the eyes, for it appears when they are open, and disappears when they are shut. This means that consciousness possesses colour through the eyes, but not that *I* see the colour.<sup>1</sup> We may learn also from physiology that red causes a specific movement in my nervous system; and since the cross-section is in time as well as space, I may introduce into it the thought of the neural response which I do not sense at the moment but only introduce by reflection. Even this does not account for *my seeing* red. It connects red with the neural response in the cross-section. But to say that the cross-section contains my seeing of red is to import into the cross-section itself the theory that seeing happens when there is a cross-section containing colour and there is a neural response outside that cross-section. We cannot say that the neural response as in the cross-section is equivalent to seeing the red in the cross-section. That

<sup>1</sup> We should learn also that the colour is related differently to my body and to the light, without which also it would not appear in consciousness. But still this would not mean that it is *I* (i.e. my body) which possesses the consciousness of the colour. On the contrary, my body is possessed by the consciousness. The consciousness which sees is not mine in the same sense of 'mine' as the body is mine.

would be to suppose that the neural response as in the cross-section not only is a seen or thought movement but itself sees. Or to put the matter otherwise, the neural response in the cross-section is a thought or image and the red is a *sensum*, but the first is not the consciousness of the second. It is only the cross-section as a whole which is consciousness. But it is not myself. On the other hand, my body which is myself is not conscious. On the view of the text there is no such difficulty, for from the first the colour is object to a conscious act of vision which is connected continuously by experience with the consciousness of open eyes as the condition of it, or of directing the eyes as the outcome of it.

The same thing may be put, perhaps more clearly, thus. Instead of myself, suppose I am observing another person. I should observe the red and his neural response to it. Now I should observe that he is alive, and is behaving like a superior kind of plant. But how should I say that he has a field of consciousness of which the red is a part? I cannot say that, because the totality of my objects is mind or consciousness, the totality of his objects is consciousness. For while I am aware of myself as a living thing with a field of consciousness, I am aware of him only as a living thing, making living responses which are indeed the same in kind as mine. We should be inventing once more the conception of a foreign consciousness. I could only attribute to him consciousness, if consciousness means not the field of objects known to me in my specific responses to it, but any field of objects to which anything responds specifically. The plant has consciousness in this sense equally with him or me; but so too has the material body. Consciousness then becomes the name of any field of objects to which any thing whatever responds specifically. It becomes a mere name for compresence. We are back at Leibniz, but without the soul; *Hamlet* without the Prince of Denmark. The difference between creatures is that their consciousness is large or small, articulate and detailed, or inarticulate and blurred—Leibniz would say distinct or confused. The idea of consciousness becomes universal but otiose.

And how do we arrive at such a conclusion, which is of course not that of the doctrine in question but is forced upon it? Only by starting with the idea of consciousness as the field of objects to which I make specific neural response and then eviscerating it of this specific relation to myself which it has in my original experience of what consciousness means.

I am compelled then to agree with Mr. Santayana, when he suggests<sup>1</sup> that consciousness is in fact the search-light itself. It is a quality of the creature which has it, as life is of the creature which has life, or materiality of matter; not of the objects which are illuminated by the light.<sup>2</sup> That field of objects, as will later I hope be made

<sup>1</sup> In an article on Mr. Holt's book entitled 'The Coming Philosophy' in *Journal of Phil. Psych. and Sci. Methods*, vol. xii., 1914, p. 457.

<sup>2</sup> My purpose is anything but polemical, but to set my own less simple but as I think more faithful view of knowing for comparison against Mr. Holt's simpler but as I think too simple one. Still less is it to review Mr. Holt's book. But I fancy I discern in it the intercrossing of our two views. Thus the spirit of the theory requires us to say that life as in a plant is a particular sort of complexity of the 'neutral' elements and consciousness a still higher one. Now, one part of the conscious cross-section may be a living plant. But the life of the plant as in my cross-section is not the objects which are a cross-section to the plant, but a property of the plant as an organism; so that it would seem life belongs to that organism; why not then consciousness to the animal or human organism? On the other hand, in one place (pp. 205-6) the plant is said to be "conscious of that to which it specifically responds." This is a different view, which would make consciousness not a character of a certain cross-section in a conscious being but would make life a sort of consciousness. We cannot stop with life, for everything responds specifically to its environment, and consciousness would be a name then for any cross-section of the objects of any being whatever, and then consciousness or mind would lose its place in the hierarchy. But in that case the differences between the members of the hierarchy—that is, in so far as they are material, or alive, or conscious—would seem to belong to the things themselves in so far as they are material or plants or animals.

Mr. Holt's doctrine that the hierarchy is a scale of complexity of elements made of neutral stuff is one with the general spirit of which I heartily agree. But my agreement does not go further. His neutral stuff is not spatio-temporal, but its elements are apparently first and fundamentally concepts of identity, difference, and number, and then secondary qualities. He constructs his world in the first instance out of categories. But I have said enough in Bk. II. to indicate how impossible I find this procedure, or to agree with Mr. Holt's fundamental doctrine

evident, is a perspective or revelation of the real world of things; and whether the objects are percepts or ideas, whether connected or disconnected, whether the revelation is true or false, the scene unrolled before us is the same in kind as the scene presented in sense. Yet the relation of these objects among themselves is one thing; their emergence *into our view* is another, and is differently experienced, and it is this order of their occurrence which is our mental history, and is enjoyed and not contemplated. It is ours, whether forced upon us or due to our initiative, and it consists of mental acts. To treat consciousness as the field of objects is like saying that breathing is the air, as altered in its chemical constitution by the breathing. Life exists in the intercourse of the living thing and its surroundings, and it is neither equivalent to its products nor exists without them. In like manner, consciousness exists in the intercourse of the conscious being and things, and is neither equivalent to the objects it selects, nor can exist without those objects.

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that propositions are active, which I could only understand if they are taken to be relations of fact as in Space-Time and not as thoughts with which we can begin a deduction of the world. Hence it is that his 'neutral mosaic' seems to me unacceptable. Space-Time is neutral in the sense that is neither matter as such nor mind as such but these are complexes of it. But Space-Time is not a mere thought but really a stuff.



## CHAPTER V

### MIND AND ITS ACTS

Mental acts  
responses  
to objects.

THE partners to the transaction which is called the relation of cognition are the act of mind and the non-mental object. The various orders of non-mental finites were described briefly so far as was necessary for metaphysical purposes in a previous chapter. All that was said of mind was that it was the substance of mental acts or processes. It is time now to describe these processes more explicitly, which we could not well do before, because the description of them is intimately dependent on distinguishing them from their objects. At the same time it was not possible to take over from the relevant science of psychology any well-understood and accepted statement of the nature of mental processes, for the foundations of psychology are at present involved with the theory of knowledge, treated as an independent science and not, as here, as a chapter of metaphysics.

There is no mental act but is correlative to its non-mental object; the mind enjoys itself only as there is an object contemplated, which contemplation is the very act of enjoyment. A sensory object brings the mind into compresence with it; an ideational act of mind puts the mind into compresence with its object, brings the object as we say before the mind. These facts have their analogues in the lower empirical levels. Mind stands nearest in the order to living organisms, and we have seen that vital actions either respond to external stimuli, or when they are provoked internally may relate the organism to some specially appropriate external thing, as

when the drosera secretes the sticky substance which is to catch the flies on which it feeds. These specially preparatory processes may be peculiar to life and mind. But throughout finite existence there is no act which is not related to some other finite; as I understand, within the atom there are direct acts of initiative in the emission of rays which thus in a manner bring the atom into relation with other physical things. However this may be, however far down analogies to ideation may exist, every action either is the effect of something outside, or alters the relation of a finite to what is outside.

The mental act is thus the conscious response to some non-mental existent finite which is its object. I use the word response in order to avoid the word reaction, which it seems forced and unnatural to apply. For the organism is commonly said to react upon some actual or causal stimulus, and we should hardly describe the search for the absent food as a reaction upon the food, but rather as a reaction on the internal stimulus of depletion which sets the organism on its search. In the same way we cannot say that my remembering of a past event is a reaction upon the event remembered, for that event no longer acts causally upon my bodily organs. The recollection is evoked by and is a reaction to the internal stimulation, whether it is physical or mental, which suggests the recollection. In a stricter sense, however, the language of reaction to the object is unexceptionable. Though the internal stimulus causes the process of recollection, the form or pattern of the process is determined by relation to its object. For it is an acquired neural disposition whose character is defined in the main by the past actual or sensory experience. It is only the strangeness of the notion of reacting to a past or future event which makes us stumble, because we are possessed by the prejudice in favour of the actual (to use Mr. Meinong's phrase), and think that past and future are not real because they are not sensory. In truth, remembering and expecting are the reactions that are possible to a past or future object. At any rate mental acts belong to the class of vital reactions. But to avoid

all these intricacies let us call the mental act the response to its object. What is essential is that there is no mental act without its appropriate object, and that this object is a distinct existence from the mental act, and may, as we have seen, exist without the mental act.

Mind made  
up of  
conations.

In the next place, since the object is an existence distinct from the mind and only selected by it, there is nothing in the mind (with a possible reservation to be made on behalf of feeling<sup>1</sup>) but acts. 'Act' in this usage is equivalent to process and does not imply the special activity which is felt in certain mental processes or acts like desire or endeavour or willing. It includes passive acts of sense as well as activities of volition. The term conation is commonly restricted in its usage to such active processes; but in a more extended sense every mental act is a conation and is nothing else, except for the possible addition of feeling. It is equally legitimate to use the term employed by Mr. Ward<sup>2</sup> and to identify consciousness with attention. The word 'conation' has the advantage, for it carries with it the meaning of practical action, and all mental action is primarily practical.

Now, cognition is not a separate kind of action from conation. It is not even a separate element in a mental act which can be distinguished from a conative element in the act. Cognition is nothing but the conation itself in so far as it is compresent with and refers to an object. We do not in perception have an act of cognition which leads to an endeavour towards the perceived object. The object is there and excites our sense and with it the suggested elements of ideation. This mental excitement, partly sensory and partly ideational, is a conation which issues in certain external bodily actions appropriate to the object. As issuing in such actions the act is conative. But this conation is itself that consciousness of the object which is called the perception. In behaving in certain manners towards the object we perceive it. And just as

<sup>1</sup> Discussed and dismissed below, pp. 122 ff.

<sup>2</sup> See his discussion in *Psychological Principles*, ch. iii.

the animal goes in search of food, so in the act of preparation for the taste of the orange we forecast it in idea. Thus the perceiving act is nothing, but the perceptual, or impulsive conation itself,<sup>1</sup> in so far as that conation which is partly touched off by the external thing itself, say the orange, partly by the supplementing mind, refers us to the object or the perceptum.

Illustrations might be multiplied indefinitely. We do not first perceive the apple to be a round red-cheeked thing which is edible, but we are aware of it as edible in and by the act in which we seek to eat it, which it provokes in us. In performing the mental act which ends in holding our hands so as to catch the cricket ball which is coming to us in a certain direction, we are conscious of the direction in which it is coming to us; we do not first cognise its direction and then adjust our action to that; it compels us to act in a certain fashion and we thus become aware of it. Simple sensation is a reflex act of attention evoked by the sensum (that is by the thing in so far as it contains the sensum), and referring to it. According as the sensum is red or green or sweet, it evokes by the light from it which acts on the retina, or the liquid containing it which acts on the tongue, a different reaction, which is the consciousness of the sensum. In so far as the conative act refers to its object it is a cognition. The cognitive element, therefore, of a mental act is, to use a paradoxical expression, not anything distinctive of the act as a process taking place in the mental substance itself, it signifies rather that the mental act refers to a *cognitum*. Thus the sensory conation is correlated with the sensum, the impulsive conation with the perceptum and the like. It is because in our mental acts there is an object revealed to us that we speak of the act as a cognition and not as a conation.

The reason why the cognitive aspect of the conation,

<sup>1</sup> The whole discussion is founded on Mr. Stout's treatment of perception in connection with impulse or instinctive action; one of the greatest contributions that have been made to psychology (*Manual*, Bk. III. chs. i., ii.). I am responsible for my own use of Mr. Stout's work.

Practical  
and  
theoretical  
conation.

for it is nothing more than an aspect, not something existent which differs from the conation, comes to be separated from conations, is this. Conations are of two kinds. Primarily conation is practical, and it issues in movements which tend to alter or destroy the object or at least to affect our relation to the object. Thus the perceptual conation of perceiving an apple is primarily one which issues in movements of seizing and eating the apple. Or the outward movement may merely remove us from the object, as from a wolf, or bring us nearer to it, as to a fire in winter. But besides such practical conation, the issue of the conation may be suspended, as in merely watching the object. Here too the conation issues in movements, but they are not directed to interfering with the object but to sustaining our attention to it, that is to maintaining the conation as a mental process while inhibiting its normal reaction upon the object. Sometimes the outward movement is switched off into speech or other gestures. Such conation is to be distinguished from the other kind of conation as speculative or theoretical. Ultimately it grows out of the inhibition of the practically directed issue of our mental acts. We do not stretch out our hands to the stars in the childish impulse to possess them, but observe them with a telescope; nor cower in terror under a solar eclipse, but observe the edge of the sun. When we have resolved neither to hate nor love mankind but to observe them, we have changed from the attitude of practical to that of scientific study of man. Thus speculative conation, or cognition, is isolated from practical conation by diversion or suspension of the practical movements which alter the world. We learn to alter ourselves and leave the object alone. But though we call the second speculation or science or knowledge, there is no difference in the mental act so far as it is directed towards the object. The difference lies in the whole interest of the mind, which in the one case leaves the conation to its normal course, and in the other inhibits its normal issue or diverts it into speech, or to the suggestion of fresh conations which have their objects in turn, that is, leads it on to a train of ideas.

It is of the last importance for psychology as well as for metaphysics to recognise that the object is cognised in and with the conation, and that we do not first cognise and then act, but know in acting. But our acting may take divergent courses. We do not do because we know; but we know because we do, and we end by knowing without doing. Yet our mental action, whether speculative or not, remains to the end a doing.

Thus of the two, cognition and conation, we must abandon one or the other, if we are attempting to describe what our mental acts are in the mental substance. Either, because there is an object which we cognise we must call mental action nothing but cognition (I defer feeling), and then conation merely marks the fact that all such mental process issues in movement of some sort which may be purely external, non-mental, bodily movement; and always sooner or later after even the longest train of ideas does end in such movements. Or we must maintain that the mental act is a conation, which is something mental, and not merely physiological, and then cognition is simply the reference of this act to what is non-mental, that is to the object without which it is meaningless. I prefer the latter alternative as a statement of the truth. For it lays stress on the practical character of mind and brings mind into line with all other finites, like life and lower orders of being, the essence of whose life is to be movement. The word 'cognition' of itself suggests passivity, or at least is far from appropriate to a process whose being lies in its outward direction to a non-mental thing. Practical action becomes an accessory of cognition; whereas in truth cognition taken alone is an outgrowth and arrest of practice. I shall therefore say that mental action is conation, and that cognition is the aspect of it which I have thus so often described. But cognition has no claim to be regarded as a separate element in any mental act; it is not another sort of mental attitude from conation. The real distinction lies in the two different subclasses of the one class conation.

Cognition is then nothing but conation as considered in its objective reference. Perceiving is seizing without

its practical motor issue. Expecting is reaching out in speculation to the future; remembering, as has before been indicated, is reaching backwards in speculative desire to the past. Judging or the apprehension of a judgment or proposition is willing in its mere objective reference: when I will to go to Glasgow, the object of my will is the proposition I am going to Glasgow; when I judge the earth is round I am willing so to treat it, in a case where the outward issue of my willing is speech or the setting in motion of a train of free ideas. To this particular illustration, the identity of judging and volition, we shall have occasion to return.<sup>1</sup> Greater detail is out of place in a metaphysical inquiry. It is the business of psychology and I have endeavoured elsewhere to supply a sketch of a psychology so conceived, to which I can now only refer.<sup>2</sup>

Feeling.

This result would be simple and satisfying were it not for feeling, which is commonly regarded as a third element in all mental process with cognition and conation. The claim of cognition has now been dismissed. But what is to be said of feeling, that is of pleasure and pain, and whatever other kind of excitement we may reckon under this head? What feeling is, is without doubt the obscurest elementary question of psychology. Feeling is certainly not a categorial character of mind but an empirical one, and it is certainly closely connected with conation; so that it has been linked together with conation under the name of interest, and set against the second element of cognition.<sup>3</sup> Some have even gone so far as to regard feeling as what is distinctively mental, to which conation, if its existence is admitted at all, becomes secondary. The metaphysical probabilities are against such a doctrine, which cuts off mind from its alignment with other things.

As an independent element in the analysis of a mental

<sup>1</sup> Below, ch. ix. B, p. 248.

<sup>2</sup> 'Foundations and Sketch-plan of a Conational Psychology,' *Brit. Journ. of Psychology*, vol. iv., 1911.

<sup>3</sup> G. F. Stout, *Groundwork of Psychology* (London, 1903), ch. iii.

process or even as a mere toning of cognitive experiences, as it is often represented to be, there seem to be insuperable difficulties in the way of insight into its real nature. Feeling so regarded seems to repeat the characters of the sensory process to which it is attached, except for the disputable feature of differences in quality; it has intensity, duration, and at least some degree of localisation. Its "parasitical" nature seems to be thus clearly indicated. The most satisfactory conception of it upon these lines treats it as arising somehow in the course of a conative process, according as the conation, or the underlying neural process, moves smoothly to its end or is obstructed. In sense-feeling pleasure attends the mental return to equilibrium after the mind has been disturbed by the sensory stimulation; pain means impediment to this return. The theory is founded in its modern form largely on the pleasure and pain experiences of mental functions higher than sensation, such as the pleasures or pains of gratified or disappointed expectation, the pleasures of harmony or pains of disharmony in aesthetic composition, or the simpler pleasures which arise from harmonious blending of two colour sensations. The theory in respect of simple sense-feelings is an extension downwards from these higher integrations. On this view feeling still is parasitic to conation, and conation would still claim to be the dominant feature of mental life.<sup>1</sup>

But many considerations tell against this conception and suggest that the clue must be found, if it can be found, in the sense-feelings themselves instead of the higher feelings. In general sense-feelings appear to follow the character of sensations. They are localised, sometimes very imperfectly, but sometimes quite definitely, in certain organs of the body. Sometimes indeed they are so diffused that we are apt to regard them as being purely psychical rather than bodily. Yet there is little but their want of specific character, I mean that pleasure and pain belong to any kind of sensation, to mark them

<sup>1</sup> In previous papers I have followed Mr. Stout in this view and have called pleasure and pain modalities of conation. But I think now that I have been mistaken.



off from the order of the organic sensations, such as hunger and thirst. These might at first sight seem wholly psychical, but we have no great difficulty there in distinguishing the bodily affection of hunger from the psychical awareness of it. In the same way we can distinguish pleasure from the consciousness of it.<sup>1</sup> Thus the direct experience of pleasure and pain seems to fall in with what is suggested by the theory that there is nothing in mental acts but consciousness or conation, namely, that feelings are objective experiences of the order of organic sensa. Such sensations as I shall point out in the next chapter are experiences of the bodily life, as distinguished from the body as a merely physical thing, and the suggestion both of the facts and of theory is that pleasure and pain are not mental modifications but characters of life of which the mind has awareness, as it has of 'everything which it contemplates, and that the mind does not enjoy them, however strained the technical expression may seem in this connection. According to this a plant has pleasure as a condition of its living body just as it has hunger and thirst; but it is not conscious of them, for they are phases of its life and unlike us it 'enjoys' them in the extended sense of that word.

What the conditions of bodily life are which constitute pleasure and pain remains to be discovered. It by no means follows that there are pleasure-localities<sup>2</sup> (which are certainly only hypothetical), comparable to the pain-

<sup>1</sup> The distinction of pleasure from the consciousness of it is insisted on by Mr. G. E. Moore, quoting Plato in support, in *Principia Ethica* (Cambridge, 1903), ch. iii. § 52.

<sup>2</sup> In a well-known article, 'Über Gefühlsempfindungen' (*Ztsf. f. Psych. u. Phys. d. Sinn.* vol. 44, 1906), Prof. C. Stumpf has proposed the doctrine that pleasure and pain are neither the feeling-tone of a sensation, nor a separate element in one, but an independent class of sensations, of which bodily pain (Schmerz) is one example. He does not assert that pleasure is in all cases peripheral; it may sometimes have its physiological basis in central processes "which come in as accessory effects of modifications of the circulation in the brain" (p. 22), and even where they cannot easily be dissociated from ordinary sensations like those of sound and light, they are central accessory sensations (Mitempfindungen). The doctrine may need to be revised and modified, but though in previous papers I have ventured to regard it as unlikely, I believe now that in

localities which are known to exist. Still less that pleasure and pain are combinations or groupings of visceral or other bodily sensations. I have been careful only to say that pleasure and pain are of the order of vital sensations. It may be that pleasure is a character of the organism in so far as any function of a sense-organ goes on in harmony with the bodily welfare; and pain or disagreeableness correspondingly. This would make pleasure and pain a fact of "integration" as Mr. Watt supposes.<sup>1</sup> But how such a life-condition of welfare or the reverse is conveyed to the conscious centre I do not know. The recent discovery by Messrs. Head and Holmes that lesions of the optic thalami intensify pleasure and pain<sup>2</sup> and also the emotions seems to imply some such arrangement for reception of pleasure and pain. All I am concerned to suggest is that pleasureableness and painfulness are not mental conditions as such but objects of them, and in themselves bodily or vital conditions of which we are conscious. If this is so, the higher pleasures like those mentioned above are greater complexities of more elementary feeling. In all probability then feeling is not a constituent of any mental act, nor a mere feeling tone of the act, but is an independent act with pleasure or pain for its object.<sup>3</sup> We have thus no reason to alter the conclusion that the processes of which mind consists are the highly complex movements carrying the quality of consciousness, which are described as conations.

The one and distinctive quality of mental acts is their consciousness. What then are the contents of the mental

treating pleasure and pain as objective and not as subjective, it is in the right direction. The conception is not extended by Mr. Stumpf to emotion. (See on this also an earlier article on Emotions in the same journal, vol. 27, 1889.)

<sup>1</sup> H. J. Watt: 'The Elements of Experience and their Integration' (*British Journ. of Psychology*, vol. iv., 1911, § 10, pp. 184 ff.).

<sup>2</sup> *Brain*, vol. 34, 'Sensory Disturbances from Cerebral Lesions,' ch. ii. pp. 124 ff.

<sup>3</sup> Any previous expressions in this work (such as in Introduction, vol. i. p. 23) which seem to imply a different conception must be corrected accordingly.

The contents of the mental act: empirical determinations of categorial characters.

act or enjoyment, and in particular what is it in the mental act which corresponds to or refers to the quality of the apprehended thing or selected part of the thing, with the intensity which goes with that quality, the loudness of the sound, intensity of the pressure and the like? When I ask what the contents of a mental process are I am using the word in the same sense as when I ask what a glass which holds water is made of and what is its shape and size and thickness. In another sense the water is the contents of the glass which holds it. But though the non-mental object is distinct from the mental apprehension of it as the water is distinct from the glass, the object is clearly not contained in the mind in this sense. Sometimes, as we have seen, the object of the mind is distinguished from the thing of which it is the partial revelation, as being the 'content' of the mind. The only use of such a word is to indicate the selective action of the mind in determining its revelations of things. But it is an undesirable usage, for it is bound together with a mistaken theory and it conveys the idea that the object is still in some sense psychical. 'The contents of the mind' is good English for what is really in the mind, and objects are not there. What is in the mind is whatever features can be discovered in the enjoyment.

The question we are asking now is what are the mental features which correspond to the qualities and their intensities or other features which are contained in things. We are not asking for an account of the various ways in which things, with the distinctive qualities they possess on their respective levels, are apprehended, according as we merely sense or perceive or imagine or remember them or make judgments about them. All this description is the special business of psychology and does not fall to our office. Such differences in the way of our apprehension of things may be called the 'formal' element in the mind's operations, as distinct from the 'material' element, whereby the mind is aware of the character of non-mental things.<sup>1</sup> It is in sensation that

<sup>1</sup> I note this difference after A. Messer (*Empfindung und Denken*, Leipzig, 1908, p. 50), who however describes it, following W. Husserl,

we meet these material features of our experience in their simplest form and we shall confine ourselves here to sensation. But the material features reappear in every form of mental activity, as *e.g.* when we remember a dog with its shape and colour and smell combined in a certain fashion or arrangement, or imagine a mountain of gold. Moreover, it is in the higher formal processes that it is easiest to verify the truth that all cognition is conative process, for in these we have various material elements combined, and it is easier to enjoy the process of holding these elements together in the mental transition from one to another (as for example in perception) than to be aware of the conative character of simple sensing.

The question what is the conative feature which corresponds to the material elements of our experienced world, is different from still another question, what are the kinds of mental acts by which we apprehend in turn the different orders of empirical qualities; which will form the subject of the following chapter. At present we deal with the 'material' side of mental life.

Now the contents of the mental act or process are those which it possesses as a process, simple or complicated. They are thus empirical determinations of categorial characters, or in other words certain empirical determinations of Space-Time. It is these spatio-temporal features which make the difference between one mental act and another according to the object it apprehends. The sensing of green differs not from that of blue in quality, for sensings have no quality but consciousness, and the so-called quality of the sensing is really the quality of the non-mental sensum, blue or green or sweet. It is thus some empirical determination of a categorial feature of the mental process which is enjoyed differently according to the quality of the sensum. It is some determination of enjoyed space-time. In a previous chapter I said that according to the character of the object we are vaguely aware of a difference in place and time and more particularly in enjoyed space

as that of the quality and the matter of the mental act. I cannot obviously adopt the name quality and so I speak of the formal element.

(for we are obviously aware of the occurrence and duration of our mental acts in time). These vague deliverances are supplemented by reference to the contemplated space of the brain where we have reason to believe that our mental processes are located. We may say then that we enjoy our acts of sensing, as they vary with the quality of the sensum, as the direction of our enjoyment in mental Space-Time, and this direction is identical with the locality and direction of the underlying neural process. Such a description is open to the quite intelligible misapprehension that the process is supposed to be in some manner directed upon the sensed object, whereas direction of the mental process means the actual movement within the neural space which is enjoyed as direction in the identical mental space.<sup>1</sup> It is possible, however, to explain the situation without the misleading word direction, but employing the same thought.

The spatio-temporal mental correlate of the quality of sensation. Problem II.

Necessarily any exacter answer to the question must at present be largely a matter of speculation or hypothesis. But it has been suggested by Mr. C. S. Myers in an important paper that the so-called 'quality' of the sensation depends on the type or pattern of the neural reaction to the quality of the stimulus.<sup>2</sup> I adopt the word 'pattern' or 'type of neural reaction' as a less vague and more accurate alternative for its 'direction.' In my interpretation the meaning of the two descriptions is the same, but I hasten to add that in adopting Mr. Myers's hypothesis I do not father on him the view that there is no quality in sensation or that the object has a quality irrespective of the mind.

<sup>1</sup> See above, Bk. I. ch. iii. vol. i. p. 110 and note.

<sup>2</sup> "A sweet taste corresponds with one type of reaction, a bitter taste with another; similarly with the sensations of colour and pitch, different types of reaction are evoked from longer or shorter waves. . . . At bottom differences in type of movement must be the cause of differentiation in the quality of sensation; it would be of no advantage for the organism to experience different qualities of sensation, unless those differences were serviceable in promoting different types of response." (*Brit. Journ. of Psychology*, vol. vi. 'Are the intensity differences of sensation quantitative?' II. § 1.)

I am assuming that the neural reaction or response includes the whole process of afferent, central, and motor parts, and that it is not possible to correlate sensation solely with the afferent part of a sensory reaction to a stimulus. The neural correlate of a mental process is (as I believe, with my insufficient instruction, to be good physiological doctrine), not separable into parts but a whole. Indeed I gather that in Mr. Myers's view it is of the two rather the movement or behaviour of the living being which is the essential feature of the reactive type. The mental act then, I assume, corresponds to the transition along the whole arrangement, as that transition proceeds from afferent to efferent tracts. Perhaps it is the juncture between the two which is of chief importance, for it is there that the motion along one set of nervous elements is switched off into the other. Mr. McDougall has indeed put forward the well-known hypothesis that consciousness is situated at the synapsis or juncture between neurones, and with this the above statement is consistent. Thus the type or pattern of reaction would be the physiological plan of connection between incoming and outgoing process.<sup>1</sup> Supposing this to be correct, the mind in the act of sensing enjoys in the space-time of the mind this configuration of movement, which issues in certain physical movements of the limbs or other organs, and the difference in acts of sensing according to the quality of the object sensed is not a difference in any quality of the mind, but in this empirical character of the place and time of the act. The enjoyed categorial determination in its empirical form is identical with the contemplated pattern of reaction which the physiologist can observe or suppose. And this result appears to me to be merely a more accurate statement of what we can very roughly discover

<sup>1</sup> Compare the theory of the late H. Münsterberg (*Grundzüge der Psychologie* (Leipzig, 1900, Bd. i. p. 531). "Sensation in the sensory terminus (centre) depends in its quality on the spatial relation of the afferent path"; with which the above agrees in correlating quality with the spatial relations of the neural process, but disagrees in not confining the spatial relations to the afferent path.

in our enjoyment by simple inspection of more complicated acts of mind.

This enjoyed spatio-temporal pattern or direction of sensing I shall speak of as the 'intrinsic extension' of a sense-process (both in space and time) in order to distinguish it from the extension or extent of sensation which we experience when a sensation is prolonged in duration or when we experience a mass or group of like sensations. The alleged 'extensity' of sensation, or its voluminousness is, we shall find, a character which attends a number of sensations, but is not intrinsic to them but to the space they occupy. The 'protensity' of sensation is nothing but its continuance, that is, again, a continuous repetition of the sensation in time. Any act of sense has its place in mental time and space; but what determines its empirical difference from other sensings is more particularly the enjoyment of the spatio-temporal pattern or direction. The sensing may be momentary or prolonged. But even so far as it is relatively momentary, it still has its pattern which is the intrinsic extension.

How, it may be asked, if sensing is a spatio-temporal pattern, can it be enjoyed otherwise than as an extent? Even if it exists but for a moment, does it not occupy its pattern and is not this an extension and spread out, if only in lines and not in area or volume? The answer takes us back to the more elementary and fundamental considerations of a previous portion of this work. The pattern is not spatial merely but spatio-temporal, and its neural basis is not merely anatomical but physiological. The consciousness of sensing does not at any moment fill the whole neural structure of afferent, central, and efferent parts. Let us suppose that a sensing is purely momentary, which it never really is. It occurs then at some point-instant (or group of such); let us think of the point-instant at which the afferent process passes over into the efferent one. But that point-instant has a past and a future. It lies on a line of advance or it is the point at which complex lines of advance are continued into another complex. It is the pattern of the sensory

process which determines where the past and the future of the process are. The present moment of sensation is the point-instant where the direction of the future is determined by the past. Thus that moment of sensation sums up or 'integrates' the character of the whole pattern. The difficulty arises as said from thinking of the pattern as merely a geometrical one; it is in fact a plan of motion. The intrinsic plan of reaction which gives the sensing its determinate character is therefore not to be conceived as a stationary plan like an architect's; it is a scheme of transition, and hence in this respect the idea of 'direction' not only cannot be dispensed with in supplement to that of 'pattern' but is in fact the more expressive designation. The locality of the sensory act is included along with its direction or pattern, for certain patterns of reaction occur in determinate places in the neural structure. The distinction between the intrinsic space-time of a sensation (*i.e.* a sensing) and its extent will occupy us more largely in the following chapter. It corresponds to that between the quality of blue which belongs to any point whatever in a blue patch irrespective of its position, and the whole extent over which that quality is spread. We have extent as distinguished from intrinsic extension or direction wherever we have many processes going on the mind at once, whether they are homogeneous, as in the vision of a coloured patch, or heterogeneous, as in any complex apprehension like perception or imagination corresponding to an object of complex qualities variously arranged.

The pattern of configuration in any existent we have seen to be its universal. In any sensory process (or in any other mental process) there are the categorial feature of existence as a particular and the categorial feature of subsistence, or existence as a universal. The same distinction is found in the object or sensum. As to sensing, its particularity depends on the particular time of its occurrence and its particular locality within the large sensory neural region devoted to that species of sensing,

The  
universal  
element in  
sensation.



e.g. within the occipital area of vision; on variations of intensity; and on any variations of whatever kind which leave the pattern unaltered.<sup>1</sup> Psychologically this means that any sensing process is one of a certain kind and its object one of a certain universal quality. From the beginning of psychical life the universal and particular are united; and this is a recognised commonplace of the subject, and is illustrated at any length in the charming transference which children make of words learned in connection with some particular object to any object which is reasonably like it in kind. In other words, though sensing is not thinking there is no sensation without its universal or thought. What thinking does is merely, as in conceiving, to contemplate the universal in the object, by itself, and detach it from its particular surroundings as a separate object of attention. Thinking is the corresponding mental act which apprehends the universal as such, and we have already verified the existence in consciousness of the distinct awareness in enjoyment of the plan of any complex. When we think a colour, e.g. blue, we in like manner enjoy the pattern of blue, which is intrinsically a spatio-temporal complex, however simple. Thus thinking is only one of the formal varieties of mental process, it adds no question in respect of the material side of the mental action, except the question whether thinking possesses also intensity, which is another material feature of sensing.<sup>2</sup>

Intensity  
of sensing.

We have now to ask what spatio-temporal or categorial character is enjoyed as the intensity of the sensing, in correspondence with the contemplated intensity of the stimulus. The answer is still more speculative than that we have just given to the question what corresponds in the sensing to the quality of the sensum. Mr. Myers suggests as the ground of variation in intensity of sensing the number of the nerve fibres,

<sup>1</sup> See below, ch. vi. p. 164.

<sup>2</sup> The above appears to say the same thing as Aristotle's dictum that we perceive the particular *τὸδε τι*, but perception is of such and such (*τὸ τοιοῦδε*).

afferent and efferent, which are called into play in response to the intensity of the stimulus, so long as the type of reaction remains unaltered. It is the moreness or lessness of a reaction of the same type.<sup>1</sup> While the quality of the sensation depends on the pattern of the reaction, the intensity depends on the extent of the lines of the pattern. Another physiological hypothesis put forward by H. Münsterberg<sup>2</sup> regards the intensity as due to the quantity of excitement of the nerve fibre, or fibre, supposed to be the afferent ones. This implies that as is commonly believed a fibre can respond more or less to different degrees of stimulation. I imagine that greater excitement within a fibre would mean a larger use of nervous elements, the greater stimulus breaking down elements which resist the lesser stimulus. The other hypothesis is based on the view that the response of a fibre does not vary with the amount of stimulation, but is of the 'all or none' kind, that is, the fibre either responds uniformly and completely or not at all. This question is one for physiologists to settle. Mere reference to the number of fibres involved, while simpler, presents obvious difficulties, for it would seem to imply a discontinuous scale of intensities of sensation; and whether this is so or not is one of the vexed and very difficult questions of psychology. A purely psychological hypothesis had already been propounded by Prof. Franz Brentano, that sensory intensity is the measure of the 'density' of the sensation (that is the sensation on its objective side) in what he calls the space of sensation (*Sinnes- or Empfindungsraum*). That is, he imagines the sensation (I must not call it the sensum, for that carries with it the implications of my own view, but I may use the non-committal word sense-datum) to be stippled over the sense-space, leaving gaps, and the denser the stippling the intenser the sense-datum.<sup>3</sup> On the subjective side

<sup>1</sup> C. S. Myers, *loc. cit.* II. §§ 5 ff.

<sup>2</sup> H. Münsterberg, *loc. cit.* p. 531.

<sup>3</sup> Thus, though he does not allow colours to possess intensity, but only brightness, a pale red is less bright than another red because the red is stippled more sparsely in the first case than the second. The refer-

there is correspondingly more or less of the sensing, positive sensing mixed up with privations of it. The intensity is in either case the ratio of the full and void, and obviously the intensity is precisely the same on both sides. We may adapt the idea of density thus propounded and give a spatio-temporal interpretation not merely to the intensity of the object but to that of the sensing, falling back on the more physiological aspect of sensing. The spirit of the hypothesis is the same as that of the physiological ones I have described. For on the view of Mr. Myers the maximum available extent of the pattern is occupied more or less densely and the idea applies obviously to Münsterberg's doctrine.

But in using the notion of density whether in the physiological form or not, a proviso must be made. Density, being a ratio, is enjoyed in the mind (or contemplated in the object) not as an extensive quantity or as merely a matter of number, but as an intensive quantity. In accordance with the abstract description of the category of intensity given in a previous chapter, the intenser sensing occupies a greater space in the same time. But the space-time so occupied is enjoyed together and as a whole. It may be resolved into numerical parts, but this is something true about it and not what we are acquainted with. We are not to suppose (taking Mr. Myers's hypothesis) that the difference between one intensity and another is the mere addition of the  $n+1$ th fibre to the  $n$  fibres of the less intensity, as if it were merely a matter of adding another unit. For the  $n+1$ th fibre only comes into play when the  $n$  fibres are already used. In other words we cannot suppose that this  $n+1$ th fibre, call it fibre  $x$ , might indifferently have been one of the  $n$  fibres which made up the lower intensity. We must suppose that within the available maximum extent of the nerve, the fibres are called into action in a certain order according to the intensity of the stimulus. In the same way when fresh doses of manure are added

ence is to *Untersuchungen zur Sinnespsychologie* (before cited, Bk. II. ch. vi. A, vol. i. p. 276), ch. 2.

to land we cannot say merely that more bits of the soil come to be fertile, as if the fertility depended on numerical addition of bit to bit, though it can be so expressed. The last bit of production by the soil is only brought into play through the last dose of manure and is therefore not as it were a unit which might have occurred indifferently anywhere in the process of reaching this stage of productiveness. Fertilities form a scale each member of which is a unitary whole, and the unit in such a scale is the unlikeness of one member of the scale to the next higher fertility. Only indirectly by correlation with the amounts of manure can the scale of fertilities be measured by units in the strict sense, as a line is composed of inches all exactly alike. Similarly, though the intensity of the sensing may be resolved into or correlated with greater or less number of the conscious excitements in the sensing, it is not the mere numerical difference which makes the greater intensity, for the numerical difference must according to Weber's law be at a certain rate or ratio in order to produce differences of number that are appreciated as differences of intensity. In other words, the numerical or extensive formulation of the intensity is but the extensive equivalent of the intensity. Thus the brightnesses in the illumination from a number of candles may be represented as depending on the density of illumination by separate candles, but that density is experienced not as an addition of units but as a whole. Each member of the scale is an individual, not resolvable in the intensive experience into units; though so expressible. We do not enjoy the supposed neural stippling as a number but as intensity.<sup>1</sup>

Sensation, we saw, whether the sensing or the sensum, contained a universal as well as a particular, the universal being the grouping of its elements, or the plan of their construction. The higher mental acts up to thinking are more complex groupings of sensory or ideational elements and involve universal plans. Now, it is clear that think-

<sup>1</sup> See above, Bk. II. ch. vii., for the discussion of intensity as a category, of which the above is an illustration and partly a repetition.

Has  
thinking  
intensity?

ing being the explicit consciousness of the universal whether taken by itself as in bare conception or (as in fact it always does occur except by an abstraction) as a component element of judging or inference, is the consciousness of a plan and is itself a plan of mental action and has in this sense a kind corresponding to the kind of the universal in the object. The thinking process whose object is dog is different in kind (though not in quality) from the thinking of cat or house. But does thinking possess intensity? Mr. Brentano in the same chapter answers unhesitatingly no, for there is no possible variation of density in either the thought or the act of thinking. The answer is clearly correct so far as we have pure thinking or pure thought or a universal. A plan of grouping has no intensity; as we have seen, the category of universality does not communicate with that of intensity. But the plan is such as to admit intensity in the particular or individual cases of the universal; it includes intensity but has none. The same thing is seen to be true of the thinking. It is the consciousness of a custom of mind or disposition, and a custom has not intensity, though it may be more or less lively in the sense that the mind may possess a greater or less readiness to act along the line of certain customs, a greater susceptibility or suggestibility in respect of them than of other customs. The object of such custom is the imageless thought or universal.

Still at the same time thinking is a particular mental act and can no more exist without some particularity than a sensation without its universal. Some *point d'appui* is needed for our thinking. It may be and perhaps most commonly is a word; it may be a particular illustration of the thought in perception or image; it may be some heterogeneous percept or image. Intensity belongs to the thinking in so far as it is clothed in particular circumstance, and it never can dispense therewith in fact. But this intensity is not intensity of the custom. There is a custom which allows for intensity in its elements, but no intensity of the custom. Only, just so far as the particular circumstances to which the custom is attached are faint or

intense must the thinking have the intensity which appertains to them. Hence in an imageless thought any part of the thought may at any moment take on the particularity of an illustration. It may, if I may judge from my own case, be difficult to prevent it from straying out of the imageless region of thought, and then it becomes endowed with intensity. Plans of mental action are in fact the transitions from element to element, and though transitions may be swift or slow, lively or dull, that is not a feature of the transition itself in so far as it is the consciousness of the grouping which is the universal. Apart, then, from the intensity which belongs to thinking indirectly as related to some particular, thinking has not intensity. The intensity of thinking, which as we have seen is speculative willing, is either a name for the effort of attention which it involves and which arises from its particularising circumstances and which largely also consists in bodily experiences of a sensory character; or it attaches to belief, with its emotional character, which may vary from languid acceptance to 'intense' conviction. Thinking is in fact on the same footing as sensing. In sensing it is the particular with its intensity which is salient and the universal in it is not detached. In thinking the universal is detached but it still remains attached to some particular and thereby has intensity.

So much then by way of suggestion towards a more exact description in terms of space and time of the kind and intensity of sensing. These are its material contents, its pattern and its density. All its other contents are equally spatio-temporal, and have no quality but that of being conscious and so enjoyed. Of its so-called 'extensity' and localisation more remains to be said in the following chapter; but these and its duration and date plainly belong to its space and time. A sensation has other categorial features: it is a substance, stands in relation to other sensations, etc. In particular it has order, and we have noted the application of the idea of order to the various qualities within any modality of sense,

Summary.



like the pitches of tones. As for the liveliness or obtrusiveness (*Eindringlichkeit*) or impressional intensity, as Mr. Stout calls what Hume described as vivacity, it appears to me at present to be of the formal rather than the material order of characters of sensing; and the other categorial features of relation, substance, and the like, call for no remark. And since the higher mental acts of perception, etc., are but groupings of simple elements of sensory or ideational kind in a spatio-temporal plan, we have the result that the only contents of mental acts of whatever kind are empirical determinations of purely categorial characters, and have no quality but that of being conscious and enjoyed as such. Above all, the object of consciousness is in no real sense the so-called 'content' of it.

Secondary  
qualities  
and the  
mind.

Here appears to be the place for reverting to a deferred problem, and defending the thesis that secondary qualities do not owe their character to the mind, but only owe to it the fact that they are seen or tasted. It is difficult enough, in consequence of philosophical tradition, to maintain the position that colour or heat reside in the external things themselves, when the necessary physical conditions are fulfilled, such as the presence of light; and the position is still more difficult when the proposition is extended from colour or heat to taste or smell. But at least to think of a material process carrying the quality of colour is no harder than to think of a neural process as carrying the quality of mind—facts which we have to note and accept as the way of the world—or than it is to think that in hunger we are sensing a bodily or vital process called depletion. We are so apt to think that in this last case the mind is in a manner hungry, whereas the mind is only aware of a vital condition called hunger.

But now that we have attempted, however hypothetically, to identify what the process of sensing a quality is as in the mind, and find it to be a pattern or type of response enjoyed by the mind as direction, which varies with each type of quality sensed, the theoretical difficulty

belongs rather to the philosophical theory that colour or taste owe their being to the mind. This theory, while it has no support in unsophisticated thought which does not ask such questions, receives no support either from physics or physiology, which deal with the facts of sensation, the one by inquiring into its physical conditions and the other its neural conditions, but do not concern themselves further. Indeed it may be supposed that the notion would never have arisen had it not been in the first place for the difference between qualities proper and the primary characters or 'qualities' of matter; and secondly, for the interpretation of images as the work of mind. If it is true that the image of a red rose is mental, then since it includes the colour red, that colour is mental as well, and may be equally mental when it is perceived. But when the imagining is distinguished from the image, and when further we can say what corresponds in the imagining to the quality of redness, the notion that the colour is in any sense a creation of the mind in its co-operation with physical movements proceeding from the external rose ceases to be even plausible. There is in fact something unintelligible in the idea that out of heterogeneous material the mind could fabricate a colour or taste or smell. The only thing which makes such a notion plausible is the variability of the sensible qualities of things as the conditions vary which affect the perceiving mind: the disappearance of taste or smell with a cold in the head, the confusions of the colour-blind, the purple of the hills at a great distance; matters which await discussion in a subsequent chapter (ch. vii.).

But when we have abandoned this conception, a more insidious one sometimes takes its place. The mind indeed, it is said, does not create colour, but colour owes its existence to the physiological organism; it does not depend on the mind but upon the eye.<sup>1</sup> In what precise sense this is understood has not been definitely explained, and two alternative interpretations are possible. On the one interpretation, colour is an affection of the eye which

Secondary  
qualities  
and the  
sense-  
organs.

<sup>1</sup> B. Russell, *Our Knowledge of the External World*, pp. 78 ff.



the mind apprehends ; on the other, it is a product of the action of the eye on the light, comparable to the peptones produced by the action of the gastric juices on food, or the uric acid secreted by the kidneys as the blood is strained through them, or the carbonic acid generated in the air of the lungs. In neither of these ways can secondary qualities be held to depend on the bodily organism.

On the first alternative, which has probably not been consciously entertained, colour is an affection of the body, and in particular of the eye, which the mind apprehends as it apprehends depletion as hunger, so that in vision the eye, to adopt a convenient Aristotelian phrase, is in a manner coloured.<sup>1</sup> All the sense qualities then would be of the same order as hunger and thirst. But these are felt in the body and localised in the same place where we learn to localise the stomach or throat, and consequently we feel them in the stomach or throat ; whereas colours and smells are not localised in our bodies but in coloured and fragrant things. Our plain experience is that we do not see colours in our eyes, but only *with* our eyes and *in* the rose or apple. Further, if we are aware of colour as an affection of the body, why is it more difficult to suppose that we see it in the rose ? It will not do to say that chemical effects produced in certain substances in the eye are sensed as red though not red in themselves. For then we revert to the notion that it is the mind which apprehends as red what is not red at all.

The alternative analogy of the colours and tastes of things with the products of vital processes, such as digestion and respiration, is open to even greater objections. In the first place it also assumes that the mind is a passive spectator of the results of the interaction between the body and the external thing, and like the first alternative fails to account for the localisation of the sensible datum in the external thing. Moreover, it would appear to exclude from the physiological participants in the interaction between organ and stimulus the neural process itself. For if it is true that the mental and the

<sup>1</sup> Ἔστιν ὡς κεχρωμάτισται (*De an.* iii. 2).

neural process of sensation are identical, if the mind does not participate, neither can the neural process. What participates must be the non-neural processes in the organ ; for example, the action in the rods and cones before the neural elements of the retina are excited. The bodily organ which enters into the transaction which creates colour is comparable therefore to the blue spectacles which are not themselves seen but colour the world blue. But the comparison breaks down. For the blue spectacles do not account for the world's appearing coloured, but only for its having the blue tinge. The spectacles being coloured add their colour to things which already have colour ; much as the intervening air makes the mountain look purple. The supposition is therefore irrelevant ; and it leads also to the strange conclusion that eyes which are adapted for seeing things serve only to distort their true characters.

This leads us to what is the fundamental difficulty in the notion. It supposes that out of physico-chemical substances, the external thing and the bodily organ, life can create a new quality of colour which is not itself physico-chemical. Whereas for experience life reacts on such substances and produces substances higher or lower in structure but chemical substances still ; it may transform their colours if colours already exist, but it does not create a new thing, colour. This objection is fatal if the theory meant merely that the colour of a thing is a quality which it receives in the course of living reaction upon it. I am inclined, however, to think that in treating colour as dependent on life in a way in which it is not dependent on mind, there is lurking a notion that the creation of such products is the business of life, while it is not the business of mind ; that life consists in such production while mind does not. In truth, life is a set of processes, of breathing, digestion, and the like, whereby ingested material is transformed into excreted material, and the organism regulates the production of these changes with supreme delicacy. But these transformations are only changes of material substances into other material substances ; life does not consist in these

transformations, which are the incidental results of life. It consists in the bodily movements or processes by which they are brought about. Life does not reside in the air which the body takes up and breathes, but in the actions of its parts by which the composition of the air is affected. But, so understood, cleared from the misconception that the living body is a machinery for transforming matter from one shape into another, life is in all respects parallel with mind, and the production of secondary qualities by mind no more difficult to understand than their production by life, and no advantage is gained by the substitution of the physiological organism for mind. In fact, the modification of ingested substances by the body has its exact parallel in mind in the process by which the mind adds to the objects which are presented to it in sense ideas, that is ideal objects, corresponding to acts of imagination or reproduction.<sup>1</sup> In neither case is something new created which is of a different rank from the subject-matter which either life or mind operates upon.

We are compelled then to deny that either mind or the living sense organs give to secondary qualities their being, and to affirm that these reside in the material things themselves. We have to accept the fact that besides the categorial element in things there is also the strictly empirical element of quality of which the secondary qualities of matter are an example. At the same time these two elements are not disconnected, for quality is carried by particular complexities of the *a priori* foundation of all things, Space-Time, whose fundamental features the categories are. Miraculous we may call the existence of quality if we choose. But it is at least a miracle which pervades the world of things. The relation of the secondary qualities to matter is not stranger than the relation of life or mind to that which carries them. On the other hand, to attribute the secondary qualities to the work of mind is to believe in a miracle which is unique and does not conform to the ways of things.

<sup>1</sup> See later, ch. viii. pp. 213 ff.

## CHAPTER VI

### THE WAYS OF APPREHENDING CATEGORIES AND QUALITIES

ALL our experience of external things is provoked in us through the organs of sense, and since we have no enjoyment of ourselves which is not the contemplation of a non-mental object, all our experience whether enjoyed or contemplated is provoked through the sense-organs. The most complicated objects or enjoyments are resolvable into elements of sense, or its derivative idea, and their groupings in some empirical plan, and from beginning to end these experiences are qualified by categorial as well as empirical features. Moreover, not only do our categorial experiences come to us through the medium of sense, but those senses are the organs for the secondary qualities of matter. I speak at present of the special senses and not the organic and kinaesthetic ones. We do not see or feel or otherwise experience Space or Time except through vision or touch or some other apprehension of secondary qualities. The primary qualities which are empirical differentiations of Space and Time never reach our minds, as Berkeley saw, except along with secondary ones. The nearest approach we have to a hint of the separation of them in our experience is found in the fact that a thing may be detected further to the side of the field of view or with a fainter intensity, when it is moving than when it is at rest. But though our experience of Space and Time is thus provoked in us through sensation it does not follow and it is not the case that they are apprehended by the senses. We have first to ask how the mind apprehends Space and Time

and with them the categorial features of things. The apprehension of the primary qualities offers no particular problem when once we know how Space and Time are apprehended, and in fact we only immediately apprehend Space-Time and its fundamental characters the categories in their empirical determinations. To apprehend Space-Time as such, and as a whole, and the categories as such, we have to add reflection to our immediate apprehension.

Intuition of  
Space and  
Time.

We were content in an earlier book to distinguish categorial from empirical characters as belonging to all existents alike. They were enjoyed in minds and contemplated in external things and existed equally in both. But now that minds are seen to be compresent with things and thereby to have cognition of them, we can see further that not only are the categories features of both minds and things, but that the mind enjoys itself categorially in contemplating the corresponding categorial feature of the object which it contemplates. Let us confine ourselves in the first instance to Space and Time as such, and for convenience treat them in abstraction one from another. In being conscious of its own space and time, the mind is conscious of the space and time of external things and *vice versa*. This is a direct consequence of the continuity of Space-Time in virtue of which any point-instant is connected sooner or later, directly or indirectly, with every other. That relation was described more explicitly by the hypothesis that the instant performed to the point the office of mind, and that in an extended sense of 'awareness' each point (to confine ourselves to Space) might be said to be aware of every other in the way in which minds are aware of one another.

For clearness' sake let us take a particular case and suppose a line of colour *ab* which we see. It excites through our eyes a certain spatial tract in the visual region (not necessarily a line or even a continuous tract), and that neural excitement of the centres is the consciousness of colour. Call the neural tract AB. The points or other parts of it are, as merely spatial, 'aware' of *ab*.

Moreover, they are aware, in the same extended sense of 'awareness,' of the points in *ab* as being the origin of the whole transaction of light-movements which connect those points with the corresponding neural centres. Thus for example A is aware of *a* in general just as it is aware of every other point. But it is also aware of *a* as the beginning of the line of advance which ends at itself. A line of advance, in the pattern of a movement of light, which started from a different point would not at the same moment end in A but some other brain position. Now if there were no consciousness belonging to the excitement of AB, our minds would know nothing of the place of *ab*. That knowledge would belong to those brain centres merely as points of space; much in the same way as when something is behind our back, which we do not see, that object is still 'apprehended' not by our mind but by our body. And the knowledge would not be of the order of contemplation but would be comparable to the kind of assurance we have of one another's minds. But AB is a conscious excitement and contemplates the colour *ab*. Now that consciousness of colour is (or contains) the conscious enjoyment of the spatial tract AB. Thus we have AB conscious and the mind is therefore conscious *of*, that is contemplates, the tract *ab* as spatial and in its locality in space. Though the brain centres are excited only by visual stimuli, the excitation is that of a space already 'aware' as merely spatial 'of' its definite connection with AB according to special and definite lines of advance. Lifted into conscious enjoyment through the sensory excitement, that space is now aware as consciousness, or consciously, of the non-mental or external spatial character of *ab*.

To put the matter shortly, a space which enjoys itself *consciously* or *mentally* as space contemplates the space of the object, or rather has for its object an external, non-mental, contemplated space, contemplated that is in its form and position in total Space. And as we cognise the colour as a sensum in the act of response to it which issues in movements of the sensory organ or other motor action, so likewise in this response we contemplate



in addition the place of the colour. According to the place of the colour excitement, these motor issues are specialised; the eye or hand moves to the right or the left. Yet this specialised response remains a response to the sensory, tactual or visual, excitement and is not, as it were, the response to a place-sensum. It is part and parcel of the machinery for apprehending and sustaining the apprehension of the sensory quality. For our responses to things are practical actions designed to obtain or avoid things in virtue of the qualities they possess. If the eye moved to the right when the illuminated point is to the left the colour excitement would be lost. The specific motor-response in which the pattern of colour-sensing issues according to its place in the brain is still a colour-response, designed to fixate the stimulus, not a place-response. It is only a place-response in so far as it forms part of the visual response, and the apprehension of the place remains different from the sensing.

It is convenient to defer the fuller consideration of the apprehension of Space till we can consider the secondary qualities. I need only note here that according to the present doctrine there is no need for any specific local sign belonging to a visual or touch centre, whether that local sign is conceived to be central in its character or peripheral. The place of the brain centre is sufficient as the basis of apprehension of the place from which the stimulation proceeds. Finally, there is no assumption that the brain space AB in any way resembles the external space *ab*, nor that if *ab* is apprehended both by touch and vision, the space AB of the visual region at all resembles in shape that of the tactual region of the brain corresponding to the same external shape *ab*. Whatever group of places in any sensory region of the brain is excited to consciousness by the external thing, the enjoyment of that space is thereby the contemplation of the space and place of the stimulus sensed. The places excited in the touch region might be spread out over twice the extent of the places in the visual region, and to a square object there may correspond a fantastically irregular geometrical distribution of brain places; the result will be unaffected.

The shape and extent of the brain affection depends on the sensory arrangements of the brain, not on the shape and extent of the object.

The mind therefore does not apprehend the space of its objects, that is their shape, size, and locality, by sensation, but by a form of apprehension simpler than sensation, for it depends for its character on mere spatio-temporal conditions, though it is not to be had as consciousness in the absence of sensation (or else of course ideation). It is clear without repeating these considerations that the same proposition is true of Time; and of motion in which the space and time elements of external things are inseparably united; that the enjoyment of the date and duration of mental events is the contemplation of the external time and duration of their objects; and similarly for motion; and that this apprehension too is not had without sensation but is anterior to it. At the risk of attaching a new interpretation to a much used and misused word, I shall call this mode of apprehension in its distinction from sensation, intuition.<sup>1</sup> We contemplate Space-Time and Space and Time intuitively and we enjoy it intuitively. Intuition corresponds to that "bastard kind of reasoning"<sup>2</sup> whereby according to the speaker in the *Timaeus* the soul apprehends Space, the matrix of things. Only I repudiate the depreciatory adjective "bastard." Intuition is different from reason, but reason and sense alike are outgrowths from it, empirical determinations of it. They are its legitimate children. And as a father may learn from his child, reason may clarify the intuition, as it does in the practical working of the mind in everyday life or in the exercise of philosophical speculation, as the present investigation illustrates in the measure of its

<sup>1</sup> I am following Kant's use of the word *Anschauung*, as distinguished from sensation (*Empfindung*) and perception (*Wahrnehmung*), without the implications of Kant's subjective doctrine of Space and Time. Unfortunately the word intuition suggests direct or self-evident apprehension as contrasted with indirect. It has no such implication here. Intuition is no more direct than sensation and thought. All our apprehensions bring us face to face with their objects.

<sup>2</sup> Λογισμὸς τινὶ νόθῳ, 52 b.



capacity. It is thus the intuitively enjoyed which is cognisant of the intuitively contemplated.

Cautions  
against  
misunder-  
standing.

Every sensory act contains in itself, and consequently conceals or masks, a simpler act of intuition. The brevity of this statement may lead to certain misunderstandings which it is desirable to remove, even at the cost of excessive detail. How, it may be asked, do we know that the place we are aware of as place is the place of the colour or the touch? We do but refer the colour sensed to the place intuited, and how is this co-ordination effected? Now in sensing a colour we have not two separate acts of consciousness whose objects we refer to one another. There is no separate *consciousness* of the place, to which to refer the colour; for the consciousness, or intuition, of the place is only excited so far as we have the sense of the colour. The monad or point-instant by itself has no consciousness; though it has awareness in the extended sense of that word, which does not imply the existence of mind but only of something which performs the office of mind. Consequently there are not two acts of mind but only one act of mind, which in its sensory character apprehends the colour, and in its intuitive character apprehends the place of it. We are conscious of a place coloured or of colour in a place. The monad's excitement exists as conscious only in so far as it is taken up into the sensory excitement of the place of the reception of the sensory excitement. To be aware of the colour, and in and by the same act of a place, is to have revealed to the mind the place of the colour.

I have deliberately neglected for the present the problem which arises from the variability of the spatial appearances of things, like the shrinking of a plate to sight as it recedes.<sup>1</sup> But a general remark may be made here, because of its importance, which follows from those of the preceding paragraph. If in seeing a colour we intuit its place, it is equally true that we intuit the place only so far as we see the colour. Consequently

<sup>1</sup> This problem is discussed in ch. vii. pp. 192 ff.

whatever makes the sensory excitement in the brain indistinct, by which I mean numerically indistinct, wanting in individual separateness, affects the intuition of the place of the sensum. Such indistinctness may consist in diffusion of the sensory excitement, as when a point of light is seen by the unaccommodated eye as a halo. Or the indistinctness of the sensation may betray itself by confused or diffused movements of reaction of the organ or body. Such indistinctness in the sensory reaction according to the place excited in sensing would mean a corresponding indistinctness in the intuition of the place of the sensum.

Minor difficulties may be met upon the same lines. Why, it may be asked, if the brain-patch AB is aware of the lines connecting it with a colour-patch *ab*, do we not see these lines as well as the patch itself? The answer is that the lines of light are not coloured. If a mote is in the way which they illumine, this we do see. Or it may be asked: since the monad taken up into conscious awareness by a sensory excitement knows the place and the spatial characters of the sensum, why then are we aware of a colour simply as colour, and not aware along with it of the movements in the coloured thing as well as of the vibrations of the 'ether.' Locke indeed would have no difficulty in answering that we fail to recognise these movements because of the coarseness of our senses, and that if we were as delicately sensed as the angels we should see them, and the secondary sensations would accordingly disappear. Such an answer lies completely outside our view, because the primary qualities are not objects of sensation at all. But the real answer to the question follows the lines of the previous answers. The vibrations in the coloured body *are* 'apprehended' by the monad, or it is aware of them, so far as it is purely spatio-temporal. But in order that they should be apprehended in *consciousness* the sensory scheme must be present also. Now in seeing colour the sensation is of colour. There is no visual picture of the movements in the body which underlie the colour. Thus the monad which is conscious of the place of the colour has no

consciousness of the constitution of the colour stimulus though it is aware of it in the extended sense of that word.<sup>1</sup>

The unity  
of mind.

Before proceeding further I can now revert to the problem left over from a previous chapter<sup>2</sup> of how we enjoy our mental unity in spite of the unfilled gaps in mental space and time, and with the consciousness that there are such gaps. Hitherto I have been speaking of the intuition of external spaces and times. But the same considerations apply to our enjoyments. I wake up from dreamless sleep to see the light streaming through the blinds and am aware that I am the same mind as enjoyed last night reading Molière before I slept. Let the present enjoyment be A and the remembered one B. The point-instants of A and B are through the mental excitement lifted up into conscious enjoyment of their own mental places and times, and they also have 'assurance' (in the wider sense) of the intermediate point-instants. It was comparatively easy to see that any mental event contemplated intuitively the place and date of its object and the rest of Space-Time. It is not so easy to see that A enjoys the interval of mental space-time between itself and B. If B were a foreign mind, A would merely have assurance of B's mind and contemplate its place and time. But B is not a foreign mind, and is enjoyed as well as A, and the two point-instants are enjoyed together. Thereby the intermediate point-instants between those of A and B are lifted up into enjoyment, just as before the assurance which a point-instant had of the place and date of the object and all other point-instants was lifted up into contemplation. The assurance which the point-instant A or B, as a mere point-instant, has of the intermediate stretch of space or time modifies the two enjoyments which are together, and these stretches are enjoyed. Only they are not enjoyed as A and B are; there are no mental events to fill the empty stretches. They enter into the enjoy-

<sup>1</sup> For further discussion of localisation see Supplementary Note at the end of the chapter.

<sup>2</sup> Above, ch. i. A, p. 25.

ment not as memories but as modifications of the present enjoyed event A and the past enjoyed event B; in the same way as in perception of an object the past experience of it modifies the present object without being an actual memory. The time-gap (and the same is true of the space-gap) is contained in the enjoyment without being filled with mental events. And this agrees with the common apprehension we have of the gap in time, of which all we can say is that there is such a gap, and nothing more. The subsidiary experiences which were mentioned in the previous passage come in to inform us how the gap was filled, if it was filled at all, with mental events. We are merely aware otherwise that there has been a gap between our event A and our memory B and that the gap is mental. This is to enjoy the mental gap and enjoy our mental unity.

What is true of Space and Time is true equally of the categories which are but fundamental characters of Space-Time. Not only have minds equally with external things categorial characters, but we enjoy the categorial characters of mind in the act of contemplating the corresponding categorial characters in the object. We are aware of ourselves or our acts as having intensity in so far as we contemplate intensity in the object and not without such contemplation; we are, or enjoy ourselves as, substances in cognising external substances, in thinking or intuition of a number our enjoyment has number. It would be tedious to pursue this proposition through all the categories. Some remarks, however, seem desirable in the case of the two categories of substance and causality, more particularly the second. One point of difficulty is common to both, and may be removed at once. Our mind is always substantial even in a single act, and it is also substantial as a whole. There is a substantial coherence between all its acts, and within this larger whole of mind there are smaller substantial groups of cohering activities. This corresponds to the separation of substances in the external world which itself is, though only in a metaphor, one great substance. It is

Intuition  
and enjoy-  
ment of  
the cate-  
gories—  
Substance.

experience guided by scientific method which teaches us what objects cohere together more closely; and in correspondence therewith we learn that acts of mind which may be present as a matter of fact contemporaneously and do belong together within the one mind, do not otherwise belong together. Thus the various acts cohering together within the substantial experiencing of an orange do not cohere closely with the experiencing of a chair on which I am sitting. In the same way, in causality, some acts of mind lead on by way of causality to others as in ordinary association of ideas, but they are *prima facie* unconnected with others occurring at the same time, though there is some causal reason in the whole mind for their appearing there simultaneously.<sup>1</sup> Experience teaches us to correlate events in the external world with one another as cause and effect and to treat other connections in space and time as not causal but as we say accidental. Similarly with the corresponding mental acts in which the events are apprehended. There is ultimately some direct or indirect causal connection between all finites. But the connection may be highly indirect.

Causality.

Now there is no special difficulty in recognising the truth of the proposition laid down, in respect of substance. But causality offers peculiar problems, and both on its merits and on account of its philosophical history causality is at once the hardest and most instructive of the categories to study in detail. Causality is contemplated most obviously in observing the causal sequence of two external events; and enjoyed most obviously in observing the influence of one thought in our minds over another, as when thinking of Raphael leads me on to thinking of Dresden and the Sistine Madonna; or as when we actively suppress an idea. Yet it seems at first blush paradoxical to hold that our minds enjoy their own causality in following an external causal sequence, and still more that in influencing the course of our thinking we contemplate causal sequence in the objects. Again, when we are willing an external change and feel ourselves active, the beginning of the process seems to be enjoyed

<sup>1</sup> See above, Bk. II. ch. vi. A, vol. i. pp. 276 ff.

and the end contemplated. How can the formula apply in such a case?

A little inspection dispels these doubts. Causation, we saw, was the continuous connection in sequence of two events within a substance. In contemplating the action of the wind in blowing down a chimney, we enjoy first the act of contemplating the blowing wind and the standing chimney, and this enjoyment passes continuously into that of contemplating the fallen chimney and the wind passed by.<sup>1</sup> We pass in enjoyment through mental processes corresponding to this determinate connection, and though each stage in the enjoyment is provoked from the outside, there is the experience which is characteristic of causation. It only seems strange to say that the first enjoyment causes the second in such a case because the enjoyments are not initiated from within, in which latter case we say without reserve that we are the cause of the next enjoyment. But seeing the chimney fall when the wind blows against it with sufficient strength flows from observing the wind blowing and blowing against the chimney, and arises out of the first act of mind, so long as we continue to observe and our minds are thrown into the attitude of receptivity to nature. The second act is the fulfilment of the first when the first is taken in its completeness. When we do not see, we expect, provided we have seen before; and in fact when Hume declared our experience of causality to be the consciousness of the expectation, he was saying something true and vital, though he used it metaphysically in a different way from ours. We may thus be aware of causality within our enjoyments though no part of the process is initiated by ourselves. We only miss this so far as we take the wind and the chimney by themselves; but we cannot miss it when we take the two events as a determinate sequence within the substance of which wind and chimney are both parts. Or we may miss it, if we think causality to mean

<sup>1</sup> Pictorially this transition of one movement into another is represented by depicting two stages of the movement separately, as in Michael Angelo's representation of God's creation of the sun (another observation which I owe to the late Hermann Grimm).

that the observing of the wind blowing against the chimney has some mysterious force in it to produce observation of the fallen chimney, whereas it only means that the one observation is felt to be continued into the other.

On the other hand, when I actively suppress a thought like the thought of striking a person who has annoyed me, there is clearly enjoyed causality, but also the non-mental object which comes first, namely, the hindered attempt to strike the man, is in causal connection with the object, the man uninjured. Only here the contemplated objects are all ideal and may have no sensible correspondent in the perceived world, and the causal relation contemplated is equally ideal. I may call up the spirit of Plato to unfold the habitation of the soul (pardon me, shade of Milton, the abbreviation!), and Plato in my dream tells me his message as he would in reality. When thinking of Dresden makes me think of Raphael, so that I feel my own causality, Dresden is not indeed contemplated as the cause of Raphael, but Dresden and Raphael are contemplated as connected by some causal relation in the situation which is then my perspective of things, so that there is some reason for their being together and not merely for my thinking them together.

Lastly, when, in the mixed variety of causation, I will to strike a man and strike him, I am enjoying causality as the determinate sequence of my perceiving of him struck upon the ideation of striking him; but on the object side there is the equally causal transition from the external preparation to strike to the actual blow. But here the beginning of the whole enjoying is initiated in mind and the end is provoked by the object. Thus causality stripped of all adventitious notions of power may be enjoyed whether it is actively initiated or guided passively from the object, or half one way and half the other. The consciousness of activity adds to that of simple causality another element, that of self-initiation. "This making and unmaking of ideas," says Berkeley, "doth very properly denominate the mind active."

The experience of willing in which an idea in the

mind (whether it be a free or a tied idea) results in a change in the external world, and that of sensation in which a mental act is the effect of an event in the external world, introduce us to a fresh intimacy between mind and its object in respect of categories, that is to say as regards the mind's intuitions. Not only is a category enjoyed along with cognisance of the same category contemplated; but since the mind and its objects are compresent existents, there are also categorial relations between mind itself and the objects. Thus not only does mind enjoy its own space through intuition of its object's space, but the enjoyed and the contemplated spaces both belong to the same Space. The same is true of Time. In the Introduction<sup>1</sup> we saw that inspection of experience shows that we are aware of ourselves as in the same Space and Time with our objects. We enjoy our togetherness with them in space and time. The togetherness itself, as we saw, was enjoyed and not contemplated. If we contemplated the object as together with us, we should also be contemplating our minds as the other end of the chain, and we cannot contemplate our minds. The enjoyer and the contemplated are in fact two existents in one Space, and this togetherness is experienced by the enjoyer in enjoyment. (In the extended sense of the word, the object in turn 'enjoys' its compresence with the mind, that is with its non-mental basis or equivalent.)

Similarly the mind not only enjoys itself as substance through intuition of an external substance, but it belongs to the larger stuff of Space-Time which comprehends it and that external object. In like manner our mind and external things are, as compresent existences, in causal relation to one another, and we enjoy ourselves as causes in respect of the things we affect and as effects of the things which act upon us, as they do primarily in stimulating us to the act of sensing. Indeed, as Mr. Stout has made clear, it is the experience of our manipulation of external things which is the immediate source of our consciousness of causality, and I add that we use this experience of causality in ourselves not to discover

Causality as  
between  
mind and  
things.

<sup>1</sup> See also Bk. I. ch. iii.



causality as between things but to interpret it and realise its meaning. Simple inspection of experience assures us that in voluntary or impulsive action we are aware of ourselves as causal in respect of things, or active, and that in sensation we are passive in respect of the sensum; and once more it accords with the results of our hypothesis.

It has sometimes been affirmed that in sensation we must postulate that there is an object which causes the sensation.<sup>1</sup> Postulates are to be regarded in metaphysics with the deepest suspicion; and no postulate is needed for what experience, which is our only ultimate test, asserts. We only need to explain more precisely the nature of the experience. We enjoy our sensing as the effect of the sensum, and this enjoyment has the characteristic vivacity of all sensory experience. To enjoy ourselves as the effect of the sensum is the whole experience we have of the causal relation between the sensum and ourselves. We do not contemplate the sensum as the cause, except in this sense. To contemplate it *as cause* in the same way as we contemplate it as the cause of some other external event, would be either to contemplate ourselves as effect, which is impossible, or to experience the relation of causality twice over, first as contemplated and then as enjoyed. This is but repeating what was said above of togetherness in space and time. To enjoy ourselves as effect of what we contemplate in sense is the experience we have of the relation of causality where one of the partners is an external existence and the other an enjoyed one. Similarly when we act upon the external world we are enjoying ourselves as cause, not of course of the immediate object of our ideation (this has been commented on already) but of the change we produce in the thing, and when that change is produced we become, in sensing it, in turn effect towards it.

At the same time this discussion helps to reinforce the truth of the fundamental principle of cognition that the object is revealed to us and that it is in no sense in the mind. It might be urged that, after all, the effect of

<sup>1</sup> See before, Introduction, vol. i. p. 28.

the external object upon us is a brain process, and, since that is not known to us in the act of sensing, we are not aware of any causal relation. This objection would be much in the spirit of Hume's famous criticism of the assertion that we are aware of causality in the act of willing. But it is at once irrelevant and helpful. It is irrelevant because the neural effect though not known is identical with the conscious enjoyment which we have. And it is helpful because our ignorance of the neural effect and our enjoyment of the corresponding (and identical) act of consciousness compel us to see that what we know or contemplate is the object itself directly and not the effect it produces in us. Thus the sensum which is the cause of the sensing is not experienced by the patient as the effect which it produces in him but is experienced in and for itself as what it is contemplated to be, and, in our language, is revealed to the patient. The patient is not cognisant of the effect but *is* it; he is cognisant *of* the object which is the agent. Hume was right in seizing on the problem of causality as the vital question in knowledge. It is reflection on causality which is the best, if not the most obvious way, of approaching the whole problem of the nature of knowing.<sup>1</sup>

Thus the categories obtain not only as between external finites or between acts of mind, and not only are they enjoyed in the actual contemplation of the same categories in the external world, but they obtain as between a mental and a non-mental finite; as should be expected in accordance with the whole principle of explanation, which in its turn is attested by direct experience.

It must be added that though we only enjoy causality or other categories so far as there are external objects to be known under those categories; the converse proposition is not true: namely, that there are external things under the categories only so far as there is corresponding enjoyment *in us* under those categories. Finites below the level of mind and before the emergence of minds in the order of empirical history stand in categorial relations to

<sup>1</sup> For the above see *Mind*, vol. xxi. N.S., 1912, "On relations, etc." § 7, pp. 323 ff.

one another though there is no mind to know them. Only they are not consciously experienced.

Apprehen-  
sion of  
matter.

Of the *primary* qualities of matter nothing further need be said in this connection. They are empirical determinations of Space and Time and motion, and are apprehended by intuition. But the answer to the question by what kind of mental act we apprehend the *materiality* of matter, which as I have supposed includes its mass and energy, is one of great difficulty. The question is not of the reality of matter. Matter is not the only reality; the mind too is real and is not apprehended as material; for the materiality of the material basis of mind is not a categorial character and is not carried up, like those characters, into the enjoyment. But if I am right in thinking that materiality is really an empirical quality of a certain level of existence, though resolvable like all empirical qualities into modes of Space-Time, we have to identify the apprehension of it amongst our modes of mental action. It is, I think, apprehended in the sensation of resistance offered to our bodies. The *sensum* which we are aware of in feeling resistance is a complex one. Primarily resistance is one of the kinaesthetic sensations and closely related to the organic ones, and it has for us another interest as well as the present one, namely, in its connection with life.<sup>1</sup> But in the sensing of resistance I not only sense my own body but also the opposition to it of something or other which resists. That something or other is the materiality of the foreign object. The sense of resistance is not so simple as the sense of motion in my joints or that of hunger or thirst. In them I sense my body alone, and as we shall see as a living thing. In sensing resistance I sense the strain in my body, and I sense it not as something material but as a determination of my 'life'; but also I sense the something which resists. And the whole situation is mediated through touch, which, however, only lets resistance in to our minds as colour or touch itself lets in categories like Space and the rest. The significance of the sense of resistance seems to lie in its

<sup>1</sup> See below, ch. vi. p. 175.

thus supplying the link of connection between one very intimate thing, my living body, and another and foreign thing, matter.

Inertia as commonly understood implies on the part of matter resistance to any attempt to change its condition, whether of motion or rest. Having learnt in the case of our living bodies what this resistance of a foreign body is, and through the mediation of the secondary sensation of touch, we understand what the inertia of a material body is as displayed in its relation to another body not ours, when that situation is revealed to us by sight and not by touch. We have then an illustration of how something experienced directly in one experience may be used to interpret a different but allied experience. For it would follow that if matter is apprehended in its materiality by resistance felt through touch, sight does not itself reveal materiality, but a seen object is cognised as material through reference to what is learnt, not indeed by touch but by resistance provoked through the medium of touch. This agrees with our common experiences. For when we see colour we do not see materiality but colour. It is true that colour does as has been described reside in matter, but as colour it is not matter. The materiality of what is coloured is not carried up into the higher level of empirical existence which is colour.

In identifying the sense of resistance as containing the apprehension of materiality, I am having recourse to a form of sensation which in older theories of knowledge and of psychology played a large part, but has fallen now into something of discredit. There is no peculiar revelation of reality, it is urged, which is conveyed to us by this kind of sensation. And it is quite true that the resistance of a thing when we touch and push it no more teaches us the reality and independence of the thing than any other sensation. It is only one instance of how we come to be aware that there are things to which we must adapt ourselves, and which we have to humour, so that if we desist we lose them, as I should lose the table if I continue to move my fingers on in the direction of its edge beyond the corner where the

edge turns at right angles. This happens to me equally with colour where if I turn my eyes away I lose the colour. But, to repeat myself, I am not suggesting that the sensing of resistance has any prerogative to inform us of reality; but only that it informs us of the empirical quality of being material. If I am right it does supply not a peculiar but a special revelation of that.

Apprehension of secondary qualities.

The primary qualities are apprehended by intuition but through sensation. The secondary ones are apprehended by the specialised empirical forms of spatio-temporal mental response of the special senses. We have seen that each act of sensing has its intrinsic extension which is the pattern of the response. Correspondingly the sensum has its intrinsic extension, which is its extensive pattern in the external thing, but it is not apprehended in the act of sensation as extensive but as the quality of the sensum, blue or hot or sweet or hard.

Intrinsic extension and extent

The place of the sensum and that of the sensing are, to speak strictly, not part of the intrinsic extension but are intuited, and are extrinsic to the sensation in so far as the sensation has sensory character. Hence it is that while in the sensing the pattern is purely spatio-temporal, in the sensum it is a quality, but the place of the sensum (not necessarily or indeed ever a geometrical point) is apprehended, as all purely categorial characters are, in correspondence with the enjoyed place of the sensing. The intrinsic extension of sensation is thus to be distinguished from the extrinsic extension of sensation, which is what is commonly called its extension, but does not belong to it in virtue of its quality (that is, its occupying space according to a certain pattern) but in virtue of its occupying a space in the sense of greater or less repetition of that pattern in space. The greater or less *extent* (to describe the extrinsic extension by a special word) of sensory experience depends on the greater or less space which it fills, that is to say on the multiplicity of the sensory objects or enjoyments. A blue thing is blue as a whole because the blue material processes are spread over the area of the thing when it is subject

to the action of the light. And as we have seen the blue does not fill the whole area but is stippled over it in more or less density, leaving room for those processes which are sensed with other sense-qualities.<sup>1</sup> A single point of blue colour is nothing but the smallest area filled with that quality, and the place of such a point is thus the *minimum sensible* of extent which is coloured blue. The whole extent of the area is seen coloured because the sensory qualities which provoke our intuition of their places are not finely enough delimited from each other. Under the microscope this discrimination may occur and the blood which seems red to the naked eye is seen as a yellowish extent in which red corpuscles are seen separately. At the same time such undistinguished sensation of a coloured area is possible because the space of the area is itself continuous and is so apprehended in our intuition. What is true of the sensed colour and its extent is true also of the sensing of it. A larger area of vision is a larger extent of enjoyed space in the neural region engaged, and the separate points of vision are not enjoyed separately because, as we must suppose, the excitement provoked by sensation in those points spreads over the intervening places.

The place of a sensed minimum forms the transition between the intrinsic extension and the extent of sensory experience. The place is the lower limit of the extent. At the same time, even the minimum sensed has intensity, and intensity seems at first sight to belong intrinsically to a sensation as sensory. It is probably referable as we have seen to the spatial density of the sensum, that is the filling of the place in the same time. The notion of density was illustrated by Mr. Brentano by the paling of the red in brightness when red points are scattered sparsely over an area otherwise black.<sup>2</sup> And within a minimum of intuited extent we have according to the intensity a varying density with which the sense-quality fills it, and this density apprehended not

Intensity of sensum intuited.

<sup>1</sup> See above, Bk. II. ch. vi. A, vol. i. p. 275.

<sup>2</sup> Above, ch. v. p. 133. Brentano, *Untersuchungen*, p. 14.

numerically or extensively but taken in at once in the act of sense and integrated in the actual external fact as the intensity of the sensum, to which corresponds that of its sensing.<sup>1</sup>

It seems very difficult to separate the intensity of a sensation from its quality. Yet, to speak strictly, the intensity of the sensation is not sensed any more than its extent is sensed. We must hold, however strange the conception may be, that it is only the quality which is sensed; while the intensity is an intuition. But so close is the intimacy of the quality and the intensity, that the intensity which is the density even of a point of sensation appears to be and is commonly assumed to be a feature of sensation on a level with its quality. It is the intensity of a quality, whether that quality be blue or sweet or life or motion. In some cases a change of intensity is even confused with one of quality, as sounds of increasing intensity seem to rise also in pitch. Some writers have gone so far as to say (for instance, Mr. Bergson) that intensities really are qualities and every difference of intensity a difference of quality. This seems however not to be in accordance with inspection of experience, which distinguishes quality clearly from intensity.

When we turn to theory we can and must separate the two different integrations of Space-Time which underlie quality and intensity respectively. Quality is the integration of an extensive pattern. The apprehension of it is an enjoyed extensive pattern enjoyed as an extensive whole, but in the sensum what is contemplated

<sup>1</sup> When the whole hand or arm is plunged in hot water the water seems hotter than when only a finger or a finger-tip is immersed. This fact is of a different kind from that in the text. There the intensity or brightness is lowered by leaving unexcited places. Here we have a larger extent of the same density of stippling confused with a greater intensity. The fact is a further illustration of the truth that intensity is dependent on an extensive condition. The larger extent of the heat besides being felt as larger appears to be taken in as a whole and to be equated with a greater density of the heat. There are other illusions which are perhaps cognate. To the touch a line of points feels shorter than a continuous line of the same length. Oddly enough this is an 'illusion' opposite to that of vision, for as is well known a line of points looks longer than a continuous line of the same length, at any rate within certain limits of length.

is quality. Intensity is the integration of the frequency with which that pattern occupies its space-time, and is apprehended both in the sensum and the mind as such an integration, which in both cases is spatio-temporal and has no quality, though it attaches to a quality. To point this contrast of the two integrations; consider the pattern of a sound vibration which carries the sound in its appropriate pitch, as compared with the amplitude of the vibration which is the intensity of that sound. The greater amplitude means that in the same time there is more of the vibration, or it occupies more space in the same time. The less intense sound leaves part of the space of a greater amplitude unfilled and may thus be brought under the conception of less density. Thus quality is a purely empirical integration; intensity is a categorial one, though of course it has its empirical variations, just as Space or universality has.

Hence, intimate as is the connection between intensity and quality of sensation, so that there is no intensity of a sensum unless there is quality, intensity is and remains purely spatio-temporal. The intensity of sensation belongs with its extent and duration and not with its quality.<sup>1</sup>

But because intensity belongs even to the minimum extent or duration of a sensum, it is the connecting link between the purely sensory element in the sensum, its quality, and its categorial characters or primary qualities, place, extent, date, duration, to which intensity properly belongs. These characters though revealed to the mind through sensation are apprehended by the intuition which the sensing act contains and which cannot be had apart from the sensing. In other words, the sensing act is a conscious spatio-temporal process, a specialised form of intuition, which in respect of one of its elements, the pattern of response, is aware of the quality of the sensum and performs the sensory function proper; in respect of its other elements is purely intuitive. It is the intuitive

<sup>1</sup> There is therefore no extravagance in the suggestion sometimes made (as by Messrs. Münsterberg and Brentano) that the intensity of different orders (or modalities) of sensation, *e.g.* touch and sound, may be compared and equated.



elements which give the sensing act its particularity, or individualise it; even as their objects individualise the quality of the sensum. The current statement of psychologists, that sensations possess quality, intensity, extensity, etc., fails to distinguish the different levels to which these two sets of characters belong. It fails also to distinguish between sensing and sensum. For though the sensum possesses quality, blue or sweet, the sensing possesses no such quality but only that of consciousness.<sup>1</sup>

Extent of  
sensum.

Leaving intensity let us return to the extent of a sensory object, like a patch of blue, which is an extended multiplicity of sensa. When a sensum is said to have extent it is always such a multiplicity. The extent is extrinsic to the quality of the sensum, which has its own intrinsic extension. It follows that when I see a blue patch I see its blue quality, but I have intuition of its extent. I do not see a blue which possesses an extent but I intuit an extent of space which I see blue. I do not apprehend an extended colour but a coloured extent. The extent is not a property or character either of the mental act of sensing in its sensory character or of its object. It belongs to the act or object of intuition. An important consequence already mentioned more than once follows, not so much for psychology as for the theory of knowledge. If we suppose that our colours are extended and our touches also, we are faced with the problem of correlating the Spaces of vision and touch. They are in that case, as Berkeley rightly held, distinct Spaces, and they do but get connected by custom, though it is difficult to understand how. Now if extent does not belong to colour as such,

<sup>1</sup> I add a note on order. Both the sensum and the sensing possess order in respect of any of its characters. The order in quality of the sensum is its place in the series of qualities, e.g. if it is a sound, in the series of qualities called pitches. The corresponding order in the sensing is that of the patterns of response. These are without sound quality and it is in respect of the sensings of sounds, not of the sensa themselves, that Mr. Watt's proposition is true, that pitches are not differences of quality but of order. Thus the order of quality in sensation belongs to the sensory side of sensation, not to the intuitive side. (This repeats a note on a previous page, vol. i. p. 265.)

but colours are seen in their places within an extent, and the like is true of touch, it follows that when we apprehend the same object by sight and touch we are apprehending the same extent, and in the one case seeing its colours and in the other feeling its pressures, and these objects though they do not ultimately occupy, microscopically, the same places do all fall within the same area or volume and macroscopically coincide. There are not two distinct spaces which have to be connected by custom or otherwise, but one space which is the scene of different qualities. What experience does is to correlate colours and touches (and the same thing applies to all the other sense qualities) with one another as belonging to the same space, and this is what our experience of things actually enables us to do.<sup>1</sup> Instead of having a variety of different Spaces which we never can make one, except by assuming some Space not given in experience which is the condition of all these various Spaces, our intuitive apprehension of things supplies us with the identical framework of a piece of space, within which the sensible qualities of the things are found. Extent remains a categorial feature of experience, varying of course in empirical differences, and not sensed. It still remains true that what is sensed has its intrinsic spatio-temporal characters, but these are *sensed* as quality, and not as extended, nor even as having position or place. Hence the necessity of distinguishing the intrinsic extension of the sense-quality as such from the extent (including the place) of the whole sensory experience.

It may be added that with proper changes the same account has to be given of the duration and date of sense experience.

This analysis of the connection between sensation and intuition of any space is at variance, though not by any means so sharply as would at first sight appear, with the current doctrine that sensation besides quality and intensity possesses what is called extensity. Were it not for the established use of the word, I should have liked

History of  
'extensity.'

<sup>1</sup> I am once more neglecting the variation of spaces in our sensible experience.

to give the name extensity to the intrinsic extension of a sensum, which is not contemplated as such but as quality, and reserve 'extension' for the intuited bigness of a sensory object which arises from the plurality of simple sensa, and is the space in which they are contained. At any rate if the above account be true, sensation as sensory has no extensity as in the commonly accepted doctrine. That doctrine was historically inevitable in view of the failure of the English attempts to derive the percept extension from combinations of touch or colour with motion, and of the resembling theory of Herbart, and in view of the change wrought in the state of the discussion by Lotze's theory of local signs. For Lotze the experience of Space itself was an *a priori* one: the mind had a native tendency to view its sensory objects as contained in Space. The local signs were needed as indications to the mind so as to assign the various sensory objects to their different places in this Space. His account of them varied in the history of his thought: at first they were mere physical neural processes, apparently noted by the mind unconsciously; but in the end they were described explicitly as sensations, which attended an ordinary sensation in virtue of the place at which it affected the sense-organ of touch or sight. Still, throughout, they remain indications for discriminating place and not experiences of place. Space itself was given to the mind by the mind's own habit. In the justifiable revolt against explaining our experience or any part of it by mental habits, as a method of stating theoretically that we have to accept Space, for instance, as given to us and can offer no further account of it, what could be more natural than to empty this spatiality of experience into the elements of experience itself and declare that our sensations possessed extensity? The doctrine of the extensity of sensations is the inevitable outcome of Lotze's teaching. But the variability with which the local signs have been treated in different expositions of the doctrine of extensity since Lotze is enough to indicate how indistinct the whole doctrine is. Mr. Stumpf dispenses with them altogether. For James they appear to

be purely peripheral sense-characters. For Mr. Ward a local sign is the relation of any particular sensation to the presentation-continuum as a whole with its property of extensity. Each presentation has or may have two or more of such local signs, so that each presentation possesses extensity as well as quality.<sup>1</sup> Similarly for Mr. Stout the local signs blend together into extensity and a local sign is a differentiation of extensity. These variations in the doctrine, which is much altered from Lotze's, suggest to me that extensity is being all the while regarded as something different from sensation and only connected with it independently; and that is why I said above that my own statement is not so sharply different as it seems. To add to the indistinctness, on some of these theories experience of motion (either kinaesthetic sensation or sensation of external motion) is regarded as an integral constituent of the experience of extension as developed from sensory extensity, and by some (*e.g.* James) is treated only as a help towards exacter experience.

The earlier doctrine of Mr. Stumpf is free from these perplexities, and it will be helpful to touch briefly upon it. For him every sensation possesses four elements or as he calls them "partial contents": quality, intensity, time-character, and place. These are "psychological parts" of the sensation. Local signs have no part to play in this analysis. Moreover, he suggests, not of course with the same implications as the present doctrine, that the neural counterpart of the place which is a psychological part of the sensation is the place of the sensory excitement and nothing more.<sup>3</sup> What is meant by calling place a partial content of sensation is that quality and place are inseparable from one another, there is no quality which has not extent and no extent without quality. But they are distinct elements and vary independently: the colour

Place as  
"partial  
content" of  
sensation.

<sup>1</sup> See Art. *Encycl. Brit.* ed. ix. p. 54. *Psychological Principles*, pp. 147 ff.

<sup>2</sup> *Ueber den psychologischen Ursprung der Raumvorstellung.* Leipzig, 1873, pp. 106 ff.

<sup>3</sup> Pp. 149 ff.

of a patch may remain the same though the patch varies in size. At the same time "the quality participates in a certain fashion in the change of the extent," for the colour diminishes with the extent till, when the extent vanishes, the colour vanishes too.

My only quarrel with this statement is that it fails to mark the difference of mental function in the apprehension of quality and place (and the other partial contents). Both alike are of course contained within the sensation taken as a whole, but they are contained differently. For the purely sensory function is provoked by the quality of the sensum as its stimulus. But the place of the sensum is not a stimulus; the attempt to make it one lay at the bottom of the conception of local signs. Accordingly the place is not a sensory but an intuitive character, and distinct from it to a much greater degree than is suggested by the statement I am considering. The remark quoted that quality in a way participates in the extent proves only that where there is no extent there is no quality. Doubtless it is because quality and place are treated as "contents" of sensation, and not as objects of the sensing, that this distinctness of the sensory and intuitive functions in sensation is minimised.

Remarks  
on space-  
perception  
—Motor  
sensations.

My inquiry is not primarily psychological and I am concerned only to identify the apprehension of Space and to place it, in its relation with sensation, in a scheme of the modes of mental apprehension corresponding to different levels of existence. Accordingly I am not to discuss those details of how spatial perception is elaborated, which are supplied in such invaluable fulness in recent treatments of the subject.<sup>1</sup> But I will allow myself the luxury of commenting upon two matters which fall perhaps outside my scope. The one topic is that of the part played in space-perception by motor or kinaesthetic sensations; they cannot be elements of extension as integral components of it. The case of sensations of motion in things outside us (*e.g.* a shooting star or a flying

<sup>1</sup> Cp. Mr. Stout's chapters in *Manual*, ed. 3, Bk. iii. pt. ii. chs. iii., iv.

bird) is different. Motion is intuited and Space is only the framework of motion, and though we apprehend the motion through sight or touch yet the material derived thus may and must be integral in the direct perception of Space, for it is of that order. But kinaesthetic or motor sensations do not tell us directly of anything outside our bodies which we are contemplating, but only of ourselves, and even then they do not inform us of material motion but of motion within a living thing—vital motion. In exploring with my finger the edge of an object, my finger gives me changing sensations of the touched object and it gives me motion in my body, but the motion does not belong to the body touched. Hence all that such motor sensations can do for space-perception they do not directly but through their correlation with places and extents otherwise known. Their *sensa* are not ingredients of the extent of place, but they may enable us to refine our apprehension of those places and extents. This would apply to Lotze's attempt to identify the local signs of the eye with sensations of movement or strain in the motor arrangements of the eye. They are not fitted to be local signs, for they tell us of the place of the eye not of the coloured point seen by it. Hence, unless that position is otherwise known, it is difficult to see how this motor sensation could discriminate sensations as belonging to various places in external Space. For the sensations from the thing seen are seen by the mind as external in space to my body, but the motor sensations are felt as in my body. They could not therefore serve as the sign of difference of locality of the sensation.

My other remark concerns the attempt to treat local signs as purely peripheral, I mean as tactual or visual in some shape or form. This was Lotze's own view as to the tactual local signs; they were the differences in the feel of touches according to the nature of the underlying structures in different places of the skin. He found no such differences in the retina, and accordingly looked elsewhere for the local signs of the eye. James apparently treats them even in the eye as different feelings at each retinal point. Now it is gravely doubtful

Local signs  
as peri-  
pheral.



whether there is anything like fine enough discrimination supplied in the skin in this way for the purpose, and these different colourings of the touches admit a much simpler interpretation. For the skin not only explores but is explored and is a particularly interesting object of exploration. The different touch experiences from different parts of it serve the same purpose as different colours on a surface, which enable us to see the contours more easily than if the colour were uniform. A body is more easily felt when the surface does not give us uniform touch sensations. Supposing the eyes could see each other, there might be similar variations in the retina, and that they cannot is perhaps the reason why no such differences have been discovered with any certainty.

We must conclude that local signs which are really signs, that is are non-local experiences, cannot do the work required; and that the only local signs which can do the work, namely, central consciousness of the place affected, are not signs at all but are direct consciousness in intuitional form of the place and extent of the external object.

Though I have said nothing of the third dimension, I am assuming that the Space we cognise by intuition is three-dimensional, and the places stimulated in the brain and therefore the places enjoyed in the mind as well as the places in the external thing are places in three-dimensional wholes. Fortunately I am not called upon to raise the question of the optical machinery for apprehension of the third dimension by sight.

Apprehension of life.

The next level of existence above that of the secondary qualities of matter is life, and the quality of life is apprehended in ourselves by the organic and kinaesthetic sensations. In these, as in the special sensations, the act of sensing is distinct from the sensum; the one is an act of consciousness, the other a process of life. The sensum is not sensed through the organic or motor sense as material, which it also is. For this it must be sensed through other sensations. Yet it is as much non-mental

as the objects of the special senses. To verify this and at the same time to realise that the object is life and not any mere form of matter, compare in series the sight of an external motion, the sight of one's own moving arm, and the internal sensation of the movement which takes place at the joint. For the visual impression of the moving arm we may even substitute the visual imagination of the movement as taking place at the joints. Now it is the living motion which the motor sensing contemplates; in the other cases it is material motion which is contemplated, though in the one case located in the body, in the other located in the external world, outside the body. Pass from this simpler experience to the organic sensations. My object in the sensation of hunger or thirst is the living process or movement of depletion, such as I observe outside me in purely physiological form in the parched and thirsting condition of the leaves of a plant, which thus lives through its thirst or 'enjoys' it, but is not conscious of it, and does not contemplate it as we do our thirst; or the object may be the vital movements implied in suffocation or nausea; or I may have that intensely disagreeable sensum of the laceration of my flesh in a wound, which in its vital quality we speak of as physical pain. In all these instances of motor and organic sensation what we have to do is to separate the consciousness from the object and to recognise that the object-process has the empirical quality of life, which distinguishes it from a primary movement (or from a secondary quality) in matter. The separation is not easy to perform. For we tend to take the hunger as a whole including its conscious character, while at the same time we correlate it with a part of the body in which it is felt. We are the more apt to do so because the unpleasantness of hunger is thought to be eminently psychical, and so hunger tends to be treated as a state of mind. It is no wonder then that we should suppose such a condition to be something mental which is as it were presented to a mind which looks on at it; and that we should go on to apply the same notion to colours and tastes and sounds and regard these as mental in character. Many at least



find it difficult not to think of hunger as mental affections, arising no doubt from the body.

But the localisation of hunger in the body (however vague) is enough to dispel this misinterpretation and to set the organic and motor sensa on their proper footing. We localise them in our body because we are contemplating an affection of our body, and just for the same reason we localise our touches or pressures not only in the object touched but in the skin which is touched where the pressure also occurs, for within limits the skin and the surface of the thing touched are one and the same surface. For the opposite reason we do *not* localise our sensa of colour in the eye, but in the thing seen, and we are said in misleading and unjustifiable phrase to project our visual sensations (unjustifiable I mean if we really imply that we first feel the sensa in ourselves and then project them beyond us). We only know in fact that our eyes are concerned in seeing colours of things from the sensations of movements in the eyes in regarding the thing, or from the experience that we see or do not see according as the eyes are in the open or shut position, which is revealed by sensations of position. Rightly understood the organic and motor sensations confirm the general analysis of sensation into an enjoyment compresent with its non-mental object. Begin with a superficial regard for them and the theory of the special sensations also is corrupted.

The same considerations as we have urged in the preceding chapter enable us to discriminate the consciousness of pleasure and painfulness from these affections themselves, and lead us to believe that pleasure and pain are data not of the mental but of the vital order, of the same class as the organic sensations, but whose precise nature it is not at present possible to state.<sup>1</sup>

<sup>1</sup> There is a point of difference between the organic and kinaesthetic on one hand and the special senses on the other which has been already mentioned in connection with the subject of remembering emotions,<sup>1</sup> but which may be repeated shortly here because it has importance for the theory of

<sup>1</sup> Bk. II. ch. iv. vol. i. p. 131 note.

A special interest attaches to the sense of resistance, which is one form of motor sensation. There, as we just saw, not only have we the consciousness of the vital process of strain but of something which is not merely touched but has the quality we speak of as resistance, that is of materiality. It is the consciousness of a vital process opposed by something material, not of matter as opposed by matter, such as we have when we contemplate the shock of two billiard balls. This last we understand only when we have arrived at the experience of both balls as material, in the way before described. But our understanding is helped in the matter by the experience of resistance from one part of our own bodies to another part of the same body. When I press my finger against the ball of my thumb, besides the awareness of my thumb as resistant and material, I am aware of it as itself the seat of a strain and vital. Each of the two parts of the body is experienced as at once resisted and resistant, each suffers and offers resistance. There are two objects each of which as resistant is material and suffers resistance as vital. It is in consequence of such an experience that when we press a merely material object we describe our sense of strain as the sense of resistance on our part to matter. But this experience helps us also to understand (and this is its chief significance) material inertia as the resistant act or activity of a body which is not vital,

knowledge as well as for psychology. The sensum of the special senses is in general external to the body; but that of the organic and motor senses is the living body itself, of which body the neural equivalent of the consciousness of the sensa is itself a part. The consequence is that ideas of these vital sensa tend to become sensational, that is hallucinatory. Except in certain well-attested cases this is not true of the special senses. We do not by imagining a sensory quality make it present to ourselves in sensation. Who can hold a fire in his hand by thinking of the frosty Caucasus? But a motor or organic idea tends of its own motor character to stir up the organs themselves, which are the source of the experience and so to produce the conditions of sensation. Even with the special senses we try, if the object present to sense is agreeable, to get more of it, but this is not possible in idea. What is unusual here is normal with the vital sensibility; the idea repeats itself in sensory form, because its object is the body itself.

and the mutual relation between two material foreign bodies as resistance between them.

Apprehension of foreign life.

But our contemplation of vitality is in the first instance of our own. How do we apprehend life in the tree outside our body? For we perceive other living things only in their material qualities and their motions and other primary qualities. Their motions are complex and may be self-initiated, but examination shows them to be dependent like everything else, including ourselves, upon their surroundings. Their motions are set going partly by internal stimuli; but they act within their external circumstances. What distinguishes them from a machine is their vitality, which includes plasticity. In one respect they are machines of a certain high order, just as in that respect our bodies are, when we exclude the vitality which is in the same place as our body and is thus possessed by it. How then are we aware of the tree's life? Not certainly by projecting our life into the tree, for I may certainly see the tree to be alive without being sensible of my own life. I am sensible of myself in being conscious of the tree and of its life, and do not refer to my own life. When we discussed the consciousness we have of other minds we saw how impossible the conception of projection was in that case, and how we could not be aware of other minds even by analogy with our own. For we enjoy only ourselves, and that there could be something else which enjoyed itself was a new discovery which depended on a special sort of experience.

But in the case of life outside ourselves, though there is no projection, there is something which may be called analogy. For our life is *not* enjoyed by us, but it *is* contemplated. We are aware through appropriate sensations of something non-mental which is life. We do not become aware of it as limited to us and our bodies, though as a matter of fact we contemplate it then only in connection with our bodies. Accordingly, a set of external motions of the same kind as our own is apprehended as alive. If this be called analogy I am content,

but it is the same process as we use in extending throughout our experience a quality learned in connection with one example of a kind of things to another example. I contemplate life in a body which is my own; and I contemplate also in that body the motions or behaviour which are apprehended as vital because they are in the same place as the vital motions and are identical with them. In other words, what I apprehend as external material behaviour is also apprehended as alive. Just because the vitality in that body of mine is contemplated and qualifies the same body apprehended as material with its primary and secondary qualities, I can qualify a foreign body which behaves in the same sort of way as alive. I have touched a piece of ice and found it cold. I see another piece of ice and I qualify it as cold without having touched it. I see the plant alive just as I see the ice cold. The only difference is that there is only one body in the case of which I make direct acquaintance with life, while there are many pieces of ice from which to learn the connection of cold with the colour and shape. Such an instance of the ordinary process of extending our experience from one thing to another, subject to verification, is hardly to be dignified with the grave name of analogy. Yet the process is a less explicit form of analogy. The assurance we have of other minds was not derived from analogy at all but demanded a special experience. The reason is that mind is not contemplated but enjoyed, and enjoyment is as such unique to the individual and cannot be shared with others. But I do not experience life as *mine* or peculiar to me; and life is not enjoyed but contemplated, and consequently, without any fresh revelation, is extended to other bodies of a certain sort. This being granted, analogy in the stricter sense has also its place in the interpretation of foreign life as it has with foreign mind. The details of our own life may be used to interpret more finely and exactly, whether in the way of extension or limitation or discrimination, the bodily foundations of life which we observe outside ourselves. We may better understand the thirst and hunger of the plant, and learn

how its life differs from ours in range and subtlety. This also is in the end what we do in interpreting one physical body in the light of another.

Hence we can attach a more precise meaning to the statement of a previous chapter, that a being of superior order to consciousness, whom we called an angel, would contemplate consciousness, which for us is only enjoyed, in much the same way as we contemplate life. Such a being would doubtless contemplate consciousness only as it was presented to him in the consciousness which would belong to his own body; though we must beware of supposing that his body would be necessarily the same kind of body as ours. All that is necessary is that he should have a body which at any rate was of the conscious order. It might be asked, Would the angel in like fashion know vitality directly only in his own body? We cannot answer the question. It would not be strange if it were so; on the other hand, there might be a special machinery in the angel's 'mind' whereby he 'perceived' life anywhere in living things as we perceive colour anywhere where it exists. But it is useless to follow such speculations where from the nature of the case no certainty is possible.

Apprehension of mind.

This requires no further discussion. We enjoy our own minds, and of other minds we have assurance as to their existence derived from the experience we have before described out of its place. What further we know of their minds besides the assurance of their existence is the work of sympathy founded on our acquaintance by an enjoyment with the working of our own, which is then transferred analogically to theirs at the suggestion of their outward behaviour.

Thus in the widest sense of the phrase 'cognition of,' in which it may include the last-named cognition of other minds, we have cognition of Space-Time and the primary 'qualities' of matter by intuition, of matter by the sense of resistance, of secondary qualities by the special senses, of life by the organic and kinaesthetic

senses, of other minds by assurance which is supplemented by sympathetic imagination.

It is not, however, to be supposed that because the objects of these cognitions have been taken in their historical order in the world's development, that this is the order in which the corresponding mental machinery is developed in the mind. It is clear that enjoyment of our own mind is the simplest of all and the condition of all the rest; and as to the cognition of other minds in the significant sense of those terms, this must be very early at least in the case of the minds of mammals. But the caution is most necessary in respect of organic sensations, which apprehend something higher than secondary qualities. Yet there is good reason to think that the special senses have been differentiated from a more elementary sensibility which is allied to the organic sensibility if not identical with it; and the more primitive character of organic sensing is shown by the absence of differentiated nerve-endings in their case, though not in the case of kinaesthetic sense. The order of the development of these various forms of apprehension has nothing to do with the order in which their objects are developed in the world's time. It is merely the history of the special arrangements in the life of the conscious being, or the machinery by which these external qualities are revealed. This will doubtless be determined by the importance of such cognition for the welfare of the mind and the being which possesses it. The bodily life is the nearest concern of the self, and it is intelligible therefore that the means of conscious acquaintance with it should have precedence in the order of growth over conscious acquaintance with the materiality and the secondary qualities of things outside it. If pleasure and pain belong, as I believe, to the organic order and are conditions of the living body, there is all the more reason why organic sensibility should come before special sensibility, for pleasure and pain attend respectively beneficial and detrimental conditions of the organism. Moreover, the conscious being is already adapted like a plant, in virtue of being a living

Order of growth of the forms of apprehension.



being, to a certain range of external objects, such as the air or things in contact with the body. External things act upon the animal's body without being revealed to consciousness. Physiological reflexes may be even more efficient for having no conscious object to which they are correlated; *i.e.* if they only enter into consciousness so far as the motor response itself is sensed and the animal knows what state of his body is the outcome. Thus a conscious being may do without external sensibility, provided it is aware consciously of its own bodily self.

But though the order in time of the senses does not necessarily agree with the order in time of their sensation, categorial cognition, or intuition, precedes all sensation, not as an isolated form of apprehension, but in the sense that it is contained in sensation and masked by it.

#### SUPPLEMENTARY NOTE

##### ON LOCALISATION

The above conception of the apprehension of locality as distinct from sensation and as belonging primarily to the place of the nervous system which is excited by the sensation said to be 'referred' to the place in question is, it must be admitted, one of some difficulty. It is in accordance with the general scheme elaborated in this work, but it may be suspected of being nothing more than a mere hypothesis invented to this end, and of conflicting with known facts of psychology, and more particularly of neurology. Some further commentary and explanation are therefore added in an appendix.

Its conflict with the current theory of local signature and of the movement-experiences required to determine exact locality, apartness of two touches or colours, shape, size, etc., is not so serious a difficulty and has been met in the text. The whole notion of extensity and local signature as characters of sensation is obscure in the extreme, and is in fact invented rather upon psychological grounds than on any distinct neurological evidence; while the doctrine that definite localisation and shape require also movement sensations is for the reasons given above still more debateable. In its general feature of separating spatial experience from sensation of qualities it is in agreement with the doctrine of Dr. H. Head and his collaborators, for whom localisation of

touches and also discrimination of co-existent touches are conveyed by impulses distinct from those of touch or movement. On the other hand, the agreement is at first sight only general and limited to the proposition that spatial experience and sensory experience are distinguishable and separate. Moreover, the above theory seems at first sight difficult to reconcile with some of the facts established in the latter remarkable set of experimental investigations. They are reported in *Brain*, vols. xxix., xxxi., xxxiv. (1906-12), and recently xli. (1918).

By localisation is meant ability to determine the place on the body of a spot touched, whether by naming it or pointing to it with the finger, or pointing to the corresponding place on a picture of the limb, or, better still, of the same limb of another person. Discrimination is the ability to distinguish two simultaneous touches, or, in Mr. Stout's language, to recognise their apartness. There are separate impulses for these two processes, which are also distinct from touch impulses and from those of posture and movement. But according to these researches, which are founded on a number of cases of nervous lesions in the spinal cord, the optic thalamus, and the cerebral cortex, these various impulses and those of heat and cold and pain become variously regrouped in their course through the spinal cord and above, before they cross to the other side of the body. Pain, heat, and cold impulses cross in the spinal cord first, touch impulses later. Localisation and discrimination remain at first grouped with touch impulses. The localisation impulses remain grouped with touches (whether deep touches or light 'epicritical' ones) below the spinal level, but in the brain-stem they may be separated. On the other hand, tactile discrimination and posture impulses do not cross at the spinal level nor until they reach the medulla oblongata. Lesions of the optic thalamus show that localisation or spot-finding is separate from touch, and lesions of the cerebral cortex show that neither localisation nor discrimination is dependent on touch, nor again upon posture, the sense for which is often gravely disturbed in lesions of the cortex. Finally, in the last of these researches,<sup>1</sup> the result is arrived at roundly that the optic thalamus is the special seat of sensation so far as its mere quality is concerned, while the special function of the cortex is the apprehension, not of the quality of sensations but of their differences of intensity, the likeness and difference, the weight, size, shape of things, or in general the spatial aspects of sensation.

The great importance of these inquiries for psychology is the distinction they establish on empirical evidence between tactual

<sup>1</sup> Which I have made acquaintance with while this work is in course of printing.



(or other cutaneous) sensibility and the apprehension of the precise spatial and temporal characters of touch as requiring a separate machinery. The meaning of them is not, as I take it, that these are two distinct groups of sensations brought to consciousness, as sensations are commonly understood to be, by separate neural paths; but rather that, in the language used more particularly in the last of these researches, place and quality are distinct *aspects* of the whole sensory process, the mere tactile aspect or function being specially provided for in the thalamus, the spatial aspects more specially provided for in the cortex. Touch sensation belongs to both, but the cortex is the instrument which performs the function of discrimination of all sorts, direct spatial discrimination of touches, that of intensities, and the like. So understood, the generalisation is not open to the objections brought against it (e.g. by Mr. Stout, *Manual*, p. 245) of running counter to ordinary ideas of sense-stimulation. No theory is offered (as in the speculation of my text) as to the nature of the difference, but only as to the physiological basis of it. I venture to think that my speculation as to the nature of the distinction is not incompatible with these results, but merely gives them a different speculative reading. Holding that spatial intuitions are elicited through touch sensations by the excitement of the places where they occur, I should have to say that while any touch sensation gives an intuition of place, it is only in the cortex that the local touch excitement is accurately differentiated in the reaction which it gives according to its locality.

There remains the initial and fundamental difference that Mr. Head and his colleagues treat quality and spatial characters as being characters of the sensation as a whole, whereas for me quality and place are objects and the sensing process is purely spatio-temporal and has no quality but that of being conscious. This question is of course not raised in these researches. It makes a great difference in the end. For in the first place the view of the text dispenses with the notion that the place of a stimulus is a stimulus in the same sense as its pressure or colour; secondly, it enables us to understand how a touch and a colour can belong to the same place, while otherwise we are beset still with the old problem of how to correlate the place which is an aspect of touch sensation with the place which is an aspect of colour sensation; and thirdly, it does away with the fundamental difficulty of how sensations can be projected and referred to the external world, whereas if place is a character of sensation itself, it does not help us in referring a touch or colour outside the mind.

On the other hand, the speculation of the text labours under objections which at first sight seem difficult to overcome in view

of the facts established in these researches. It would seem to imply that when there is a touch there is not only intuition of its place and other discriminative characters, but an infallible one. Yet with a cerebral lesion touch may be preserved, while localisation and discrimination are injured or destroyed. Something has been said briefly to anticipate this objection, and more will be said in the next chapter, to the effect that intuition goes no further than sensation gives it warrant, and suffers from the disabilities which attend the sensory, or qualitative, function proper. I will therefore refer briefly to a few of these points. Take localisation or spot-finding on the body. To be aware of the place of a touch does not mean to localise it in its place in the body. That, as is pointed out (*Brain*, xxxiv. p. 187) implies a body schema, which is a touch schema. Now the monad lifted up into intuition through sensation has not consciousness of its own right in virtue of which it should localise the touched place in the spatial schema as identified with the body. To do this it would need a touch schema, and it is limited to its own touch. Discrimination, again, implies an unexcited interval. But if the touches are indistinct in the sense described, their distinctness of place will be similarly affected for the monads of the two touches. Another striking observation is the radiation or diffusion of sensations of heat and cold and pain in the protopathic state, when there is no epicritical sensibility to control it; and besides their diffusion, their reference to remote parts of the skin. The diffusion means, I imagine, that the sensations are blurred in their reaction, and thus the intuitions of their places in the brain indistinct. This is the case also with the organic sensations to which protopathic sensations are allied. The misreference of the sensations I cannot explain, but it is analogous to the tenderness felt in allied parts of the skin from internal pains, as Mr. Head himself points out, and appears to be connected with the character of the reaction. Guarded in fact as I have guarded the statement of the text, it appears thus to say the same thing as Mr. Head's doctrine in other words. The office of sensation of touch or colour is to give us touch and colour and not place. But to have these sensa distinct is to have distinct intuition of their places; to have them indistinct is to have failure of the intuition. The conclusion is that distinctness of mere sensory quality is ultimately spatio-temporal. What the text does is thus merely to offer a speculative theory of the more elementary nature of the intuitive characters. Finally, having regard to the conclusion arrived at in this chapter that intensity is spatio-temporal and not qualitative, I cannot help pointing out the importance of the observations which seem to show that difference of intensity of sensations is an affair of the cortex and therefore on a level with space-difference,

while in the thalamus, where spatial sensitiveness is undeveloped and primitive, the reaction is of the 'all or none' type.

The question may still be asked how, if Space and Time are the simplest and most fundamental characters of the world, the apprehension of them should be entrusted to the latest and most highly developed part of the nervous system. A similar question, in the reverse form, met us at the end of the chapter, how the organic sensations which apprehend a higher level of existence, life, than the special senses, should be earlier and more primitive in development. The answer is that spatial character, as I understand these inquiries, does belong to sensory process below the cortical level, but it is vague and undifferentiated; and so also does intensity. And, secondly, the vaguer, more extensive reactions are suitable to that stage of life, and the precise apprehension of Space and Time made possible by the cortex is appropriate to the higher type of mental life.

## CHAPTER VII

### APPEARANCES

CONSIDERED in itself, a thing is, we have seen, a portion of Space-Time with a certain contour of its own and a plan of configuration of the various motions which take place and are connected together within it. As a piece of Space-Time it has substance. As the whole within which the motions take place, it is the synthesis of them, and they are its changing and connected features or acts, or the accidents of its substance. This description applies equally to physical things and to minds, the whole and its details being in the case of mind enjoyed and not contemplated. The mind is the synthesis within its space and time of all the mind's acts or processes. The unifier which makes a thing a thing is its space-time. But considered as related to a mind and contemplated by it, a thing is seen, in the light of the general theory or hypothesis, to be a synthesis of *sensa*, *percepta*, images, memories, and thoughts or plans of configuration, whether of the whole or of parts of the whole. All these are partial objects which in their synthesis constitute the thing. The same result is arrived at from the deliverances of the mind itself. The thing as a whole is experienced as the synthesis of the various objects which in the course of the mind's experience of them (helped out by the experience of other minds) the mind finds integrated within the piece of Space-Time which is intuitively apprehended as that within which each partial object which belongs to the thing is found. Thus, for example, when a percept is identified with a memory, both the memory and the percept are discovered in the history of the mind to be

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unified within the space-time to which they both belong. Belonging as they do to different times, and unified by the same space, they are seen to belong to the one space-time of the thing. The mind in this experience enjoys correspondingly the unification of its acts of perceiving and remembering within its own space-time. Thus the synthesis characteristic of the thing is in no sense the work of the mind but discovered by it; and the mind's own thinghood is the mind's own unity, which also it does not make, but is, or enjoys.

The kinds  
of appear-  
ances.

But this synthesis of what really belongs to a thing is at the same time rejection of what does not belong to it. The thing is the synthesis or, if I may use without risk a simpler word, the sum or totality of its own parts. Considered as objects to a mind they may be called its real appearances, or its partial revelations to the mind. Moreover, they vary indefinitely according to the situation in time or place, or to the deficiencies, of the contemplating mind. It will be simplest to neglect for the moment these deficiencies of minds, such as we have in colour-blindness, for the objects selected by such defective minds are on the border between true or real appearances and illusory ones. Let us suppose standardised or normal minds. They will apprehend different *real* appearances of the thing in virtue of their position relatively to it in place and time; and therefore it is all one whether we suppose different appearances presented to the same mind at different times in different places, or to several minds at the same time but at different places. The question of the unification of appearances to many minds comes later. These then are real appearances of the thing; and whether *sensa* or images or thoughts, all alike are appearances, that is, partial revelations of the thing.

The appearances which do not belong to the thing itself are such as arise from the combination of the thing with other things, or from the intrusion of the mind of the observer into the observation. The first set of objects may be called *mere* appearances of the thing; the second set, *illusory* appearances or illusions. Familiar

examples of the first are the blue of a distant mountain, or the stick bent in water; of the second, the colours seen by contrast, or the plane picture of a box seen solid. In the first case it is not the thing alone which we apprehend, but along with some other thing. Although in the widest sense there is only one 'thing' in the world, yet motions do cohere together in groups and form things, so that a plant is clearly a distinct thing from a stone; and although what we shall call a thing is largely determined by our interest, so that a book is one thing from the bookseller's point of view and two or three hundred things or pages from a publisher's, yet also our interests are determined by the things, and we cannot help regarding the plant as a single thing. But it may be impossible to perceive a thing alone, and the foreign thing may distort the object and make it not a real appearance but a mere appearance. Illusory appearances always imply omission or addition or distortion owing to the abnormality of the percipient. Thus the thing itself accepts its real appearances and rejects mere appearances and illusory ones.

Now, it is the variability of the real appearances of a thing, such as, for instance, its varying hotness with the distance of the percipient, and the facts of mere appearance and illusory appearance which induce us to believe that appearances of physical things are mental and not non-mental objects. It is therefore of great importance to discriminate and discuss the different kinds of cases as briefly as is possible consistently with the great number of relevant data. I shall seek to show that in no case is the appearance mental. Even illusory appearances are non-mental. For they are *prima facie* on the same level as other physical appearances. The green we see on a grey patch by contrast with a red ground is as much non-mental and objective as the red. It is not an illusion that we see the green; it is only an illusion that we perceive the grey paper green. An illusory appearance is illusory only in so far as it is supposed (whether instinctively in perception or by an act of judgment) to belong to the real thing of which it seems to be an appearance. In so far as it is

illusory it is not a revelation of that thing at all but of something else. The illusion consists in the erroneous reference of it to where it does not in fact belong. But in itself the illusory appearance is as much object as the real appearance; and only experience shows it to be misplaced. The difference between an illusory appearance and a mere appearance is that if it is wholly illusory it comes from the subject; that is to say, whereas in the one case the distorting thing<sup>1</sup> is physical, in the other case it is the mind itself which produces the distortion.

It will, then, I think, appear that real appearances are indeed selected by the subject but are really contained in the thing; that mere appearances arise from the failure to separate the thing from other things with which it is combined as apprehended; while illusory appearances arise from the introduction by the mind of new objects into the thing, or, what in certain cases comes under the same heading, the omission of objects which do belong to it. It should be premised that the distinction of illusory appearances from mere appearances is not always easy to carry out, and indeed in common usage the stick bent in water is spoken of as illusory, while I call it here a mere appearance. The real point of distinction is that a real appearance and a mere appearance really do belong to the things apprehended (though in the latter case not to the thing which seems alone to be apprehended) while an illusory appearance does not. It is introduced by the mind; that is to say, there is some mental condition, not congenial to the true interpretation of the object, to which condition corresponds an object which is thus introduced into the true object and falsifies it. Illusions will consequently be conveniently treated along with the discussion of imagination, after the other kinds of variation. I shall begin with the simpler cases of sensations and pass from them to those of intuitions, which present much greater difficulty.

A simple example of variation of a real appearance is

<sup>1</sup> Unless of course the thing is itself mental (cp. later, ch. viii. pp. 225 ff.).

the change in the hotness of the fire as we move away from it, or in the brightness of a light. At the greater distance the illuminated thing affects the mind less according to a certain law. The mind, situated further off, selects a portion of the real brightness of the thing. The real bright colour of the thing is the quality and degree of the relevant movement which is in the thing. The quality does not change with the distance, other things remaining the same, but the brightness does. This selection, however, of the lower brightness from the real brightness does not mean that that real brightness is divisible into parts, as if intensities could be obtained by addition. It means simply that the distance of the eye (not the eye itself) secures that the larger intensity is apprehended as a lesser one. The larger intensity contains in this sense the lesser. The brightness contains all the degrees of brightness which are lower than itself on the scale. Or again the distance from a sound selects that amplitude of the same qualitative vibration which represents the diminished intensity produced by distance. For an ear at that distance the vibration has a diminished amplitude. We can therefore say the sounding body or the illuminated body contains these varying degrees of intensive quantity. The varying hotnesses of a hot body are less easy to understand. For heat is a 'localised' sensation, and is not, like touch, both 'localised' and 'projected.' With eyes shut, we experience heat at our skin, and unless we also touch the object, in which case we project the heat also, we know nothing by heat of the hotness of the external body. So far as mere heat-sense goes, what we feel as our distance varies is merely changing degrees of hotness. It is when we are otherwise aware of the source of heat that we say the *fire* feels less hot at a distance; as when for instance we first touch a hot brick and then feel it grow less hot as we retire. That we do select is verified by common speech, which does not say the fire is less hot when we move away, but less hot *here*. I am not able, therefore, to adopt, except with this reservation and with this interpretation, Mr. Nunn's statement that the fire possesses different hotness

Variations  
of real ap-  
pearances:  
(1) due to  
position in  
place and  
time of  
percipient;



at different points,<sup>1</sup> as if the fire extended wherever we felt an impression of heat in our skins which we refer afterwards to the fire we see, or the candle flame we touch. The hotness of the fire resides in the fire itself. The hotness of the fire is in the fiery matter a real motion with its quality and intensity. When owing to the variation of our sensa we use instruments of measurement which are relatively independent of our senses, and at any rate independent of our sensation of heat, we measure the real hotness of the fire by the temperature.

These are the simplest illustrations of what is called the relativity of sensations, which is thought by some to mean that sensations are mental in character. In these cases, in fact, the mind in virtue of its position in space and time is affected by only a portion of the real characters of the thing revealed to it. The same explanation applies to other illustrations of the law, when we take into account that the selectiveness may be the result of the mind's organisation, or, what is the same thing, the organisation of the living organism which in a particular part is identical with the mind and wholly subserves it. Illusion is excluded at present, but it accounts for some cases which will be mentioned. The general statement is that because of the condition of the organism the real thing is apprehended only in part. Thus the familiar experience that if one hand has been in hot water and the other in cold, the same lukewarm water will seem cold to the one hand and hot to the other, arises from the previous alteration of the physiological zero of sensibility in the two hands. The degree of heat or cold felt depends on the difference between the real heat of the thing and the temperature of the hand itself. The water is really hotter than one hand and less hot than the other. The same thing happens when we change from winter to summer,

<sup>1</sup> T. P. Nunn: 'Are Secondary Qualities Independent of Perception?' (*Proc. Arist. Soc.*, 1909-10, N.S. vol. x. pp. 205-6). The case of hotness, as Mr. Nunn observes, is complicated, "for here the condition of the body that acts as perceiving organ partly determines the object to be perceived" (that is, what we perceive in the object is the difference between its hotness and our own). This introduces a further element of selection apart from the distance, and is mentioned lower on this page of the text.

and the body adapted to winter feels a slight warmth as if it were much greater. On the other hand, in the well-known paradox of sensation that, when a cold point of the skin, that is, a point specifically sensitive to cold, is touched by a hot metal point, we have the sensation of cold, we have illusory appearance. This is an illustration of the specific energy of the sensory nerves. When for any reason a certain part of the body is stimulated and a certain neural pattern of reaction ensues, that pattern of reaction is excited even by a disparate or inadequate stimulus. The mind then responds according to its normal method, and its object is that which corresponds to such reaction. Here is a genuine illusory *sensum* due to the mind's own action. Such illusions are the price we pay for adaptation to our normal surroundings.

Some variations are due to the limits of the mind's susceptibility. Stimuli below the threshold of stimulation are not sensed at all. When two stimuli are apprehended together or in close succession their difference may not be sensed. Under these conditions the higher stimulus is not noticed to be different from the lower. The difference is there but not sensed, or at least not sensed as difference. In such cases the real thing, that is, the difference, does so far not reveal itself at all. This applies to all normal or standardised individuals. But sensitiveness varies in different individuals, whether it be sensitiveness to the intensity of a single stimulus or to difference of intensities of two stimuli. Or the defect of sensibility may be to quality of stimulus. A person may be tone-deaf and not distinguish the octave from its fundamental tone, or he may be colour-blind. Now in such cases of defect of sense for quality it is very difficult to say whether we are to attribute the variation to mere defect, so that what the person fails to sense is really present in the thing, only is not sensed, or are to set it down to illusion. It is impossible to say that the octave which is sensed not differently from the fundamental contains the fundamental, in the sense in which a higher intensity may contain the lower one. At most we can say that the real difference of quality is not sensed, and that so far as the note of

(2) due to  
varying  
sensitive-  
ness.

higher pitch is taken to be of the same quality as the lower, the appearance is illusory, as in the case of the paradoxical sensation of cold from stimulation of a cold point by the hot rod. The two stimulations excite the same reaction, and correspondingly the sounds are heard identically.

The same difficulties arise in the case of colour-vision, and the discussion of them is more than ordinarily restricted for one who is not an expert in this department, because of the diversity of theories current in the subject. The extreme case is that of total colour-blindness where no colours are sensed but only brightness. Now, brightness is an ingredient of all colour-sensation, and such colour-blindness may be taken to be selection of a certain part of the real stimulus. The totally colour-blind person is in the position of a person the whole of whose retina is like the peripheral region of the normal person's, which also perceives only brightness. But here too there arise doubts, for the brightnesses which the abnormal person perceives in the various colours in full light are not in all respects agreeable to those of the normal man under the same conditions, but only when the colours are seen under a dim illumination which obliterates the colour for the normal eye also and leaves only greys. In ordinary red-green blindness, on one theory the patient simply confuses red and green because one of the 'substances,' the red and the green, in the retina is missing. This comes under the same head as tone-deafness, and is due to defect. On a different theory he sees neither red nor green but confuses the two because he really sees blue or yellow. The difficulty is especially strong on this second theory of supposing the confusion of quality to be other than a case of illusory appearance, due to the circumstance that the visual apparatus responds only in certain limited methods of response, whatever the quality of the stimulus. So in the normal person a colour seen as red when it falls on the centre of the retina changes to a brown in the middle zone of the retina, which is the appropriate response of vision to stimulation there.

Thus in many instances, and more particularly where

variation of quality and not mere intensity is concerned, it may not be possible to attribute the variations to selection on the part of the mind from what actually is in the reality. There may be illusory appearance arising from the pre-adaptation of the mechanism which substitutes for the real sensum in the thing a sensum corresponding to the normal pattern of response. The real thing does not contain the substituted quality, but only it contains the foundation for the substituted quality. Thus defect may in such cases really act as illusion.

Let us turn to mere appearances, of which illustrations have already been given. Here we do not sense the thing, of which we apprehend the mere appearance, taken by itself but in connection with some other thing which modifies it. What we sense or otherwise apprehend is not the thing by itself, but a new thing of which the thing forms a part; and there is no reason to suppose that, illusion barred, the compound thing does not really possess what we sense. Thus the whistle of the express engine travelling away from us, to take Mr. Nunn's example, is the whistle of an engine in motion and has a different and lower note from a whistle at rest. The colour of the distant mountain is not the colour of the mountain alone but of the mountain and the atmosphere whose haze modifies the colour. Directly we know of the intervention of the modifying condition we cease to attribute the appearance to the thing itself. When we notice an opalescence in our glasses we know that the colours of things seen through them are not their own. Mr. Stout, who has rendered so great service to the discussion of these matters,<sup>1</sup> seems to treat all the sensible appearances of things, including their real appearances, as on the level of what I call mere appearances. For in real appearances one of the things which intervene between our apprehension and anything is our own body with its sense-organs. For us this position is unacceptable, because the action of the sense-organ is part of the process of sensing the

Mere appearances.  
Problem  
IV.

<sup>1</sup> *Manual*, ed. 3, pp. 455 ff. But his question is a different one, how we distinguish real change in a thing from apparent.

sensum, not its object. The sense-organ cannot be treated merely as a thing which modifies the real thing in the way that motion added to a whistle modifies the pitch of its note, or as spectacles, themselves coloured, discolour the objects around us. The distorting or qualifying thing must be either observed or observable in the sensible object. In truth, all appearances are *prima facie* real ones, and later are sorted out.

We conclude then, allowing for illusion, that the sensum in the thing itself is the qualified configuration of real motion within the space-time itself of the thing, and that the real appearances of it are the whole or part of it as it is contained in the thing. It is only the selection which depends on the mind.

Variation  
in primary  
qualities.  
Real  
appear-  
ances.

We come now to the variability of the shape, size, and position of things as they appear to the senses, that is to the varying appearances of the primary qualities of things which are not objects of sense at all but of intuition. By real shape I mean, in accordance with our hypothesis that things are complexes of space-time, the geometrical shape, and we have to account for its variation, in our experience of it. When a moment ago I spoke of sensa in the external thing as being real complexes of motion within it, I was speaking in the language of this hypothesis. The question of how we are aware of such motions did not arise, for in apprehending the quality and intensity of sensa we are not aware of their geometrical shape as extensive. But we have now to deal with the question direct, and as before we shall have to distinguish between real appearances of primary qualities and mere appearances and illusory ones. As an example of the first class let us take the familiar elliptic shape of the penny or the plate when seen sideways, or its varying size as the distance of the observer alters. As an example of the second, the stick bent in water, or the simpler instance of virtual images which we have in a looking-glass. I repeat an observation made before that from the point of view of knowledge it is indifferent whether we consider the contradictoriness of these appearances to various individuals

at the same time or to one individual at different times.

As we move away from the plate at right angles to its centre the plate retains its circular shape but diminishes in size. Owing to the nature of the medium (and the illuminated plate does not exist without transmitting its light) the retinal image decreases and the coloured disc is seen in the corresponding size. It is seen as if it had the size of a smaller disc placed at normal distance for sight, which is, as James says, the distance at which it is conveniently touched; which visual size we are in the habit of calling the real size as seen. The size of the visual object depends on the angle the thing subtends at the eye, because that determines the size of the retinal image. In saying that we see the plate as we should see a small plate situated at normal distance, I do not mean that we judge the size according to our usual experience. The size is not determined by any judgment but by what the actual size of a patch of colour at the actual distance of the plate is which corresponds to such and such a size of retinal excitation. The visual response in respect of the size, that is to say the intuitional response in respect of the extent of the thing which is called into play along with the colour excitement, has this seen size for its corresponding external object. It is not open to us to say, as may be thought natural, that we see the plate smaller at a distance because by experience we have learnt to connect the smaller retinal excitement with a smaller object. There is no precedent experience required, still less an act of judgment, comparable to that which enables us to interpret our sensations by ideas and so to fashion perceptions. The sight of the smaller visual object is immediate and sensory. To a smaller retinal excitement corresponds a smaller seen object, which is located where it is seen, namely, at the more distant place. We may if we choose call such a seen object an hallucination, but in that sense all sensation is equally hallucination. The large plate further off and the small plate near excite the same visual tract and are seen in equal size at their respective distances. The same plate when near and far



excites different extents of retinal tract and is seen in different size. Custom may indeed produce illusion, and so may an inadequate stimulus, like that of the hot touch on a cold point, produce hallucination, but there is here no question either of custom or hallucination.

The distance of the eye then from the plate acts selectively as with the varying degrees of brightness. The size which we see is a portion of the real geometrical size of the plate (for I may leave out of account the enlargement of the plate when it is too near for accommodation and we see it with a halo round it), and the varying sizes are real appearances and contained within the real size.<sup>1</sup> The position of the eye, it might be thought, acts like the water in which a stick is seen bent, and the size is a mere appearance of the plate. But the position of the eye is not apprehended as the water is or the blue spectacles may be, and it merely acts, owing to the optical medium, as determining the mental selectiveness.

It may be urged, that the plate at a distance, when it looks small, is seen (not indeed in position as a whole but in its contour and extent) in a different place from its touch appearance; and that this is accordingly contradictory to the proposition laid down as to intuition, that we do not apprehend different spaces of sight and touch and learn to co-ordinate them, but that we intuit the same space, and refer touches and colours to it as existing within it. But the apparent separateness of place does not in point of fact exist. We have only to hold the plate in our hands and move it away (which is the same thing as retiring from it) in order to assure ourselves that the touch and the colour of the plate are in the same place. The touch remains of the same felt extent; the colour varies in size, but the seen contour of the plate coincides in place with the felt contour. I emphasise the words 'felt contour,' for it is not merely a case of seeing our hand shrink along with the plate, which of course it does to sight. This very simple experiment is of great

<sup>1</sup> Cp. J. W. Scott, 'On the common-sense distinction of appearance and reality,' *Proc. Arist. Soc.* N.S. vol. xvi., 1915-16, who uses the same idea of perspectives contained within the common-sense reality (pp. 67 ff.).

importance for this and subsequent cases. For it shows that it is only in reference to Space as touched, and thought of in terms of touch, that the plate itself seems to shrink as it moves further off. Considered in themselves as purely visual objects (and they must be so regarded if we are to avoid confusion), the one patch of colour merely looks smaller than the other. If we know otherwise than by sight that they are appearances of the same thing we say that the thing shrinks to sight as it recedes. But if we do not know this, there is no thought of shrinkage. Now the experiment shows that the relative place of every part of the contour and of the interior of the contour remains the same place, and the extent is consequently the same. But if we suppose that touch conveys to us the real space, that is the relative place of every part of the thing, we naturally think that the eye misleads us. We might with equal right maintain that the touch in remaining constant is at fault. In fact neither is. There is a different vision of the one extent and shape under the different conditions, but it is still the same shape and size which is seen differently, that is the perspective is different.

The same considerations apply when the plate is seen obliquely. If it is turned round a vertical axis, the eye retaining its position, the horizontal axis shrinks and the circle becomes an ellipse with horizontal minor axis, for the horizontal diameter subtends a smaller angle at the eye than when seen from the front at the same distance. As the plate turns till it is end on, all the horizontal sections of the plate diminish and vanish and the plate is seen as a straight line. Thus, as before, the eye sees, owing to the selectiveness due to its position *under the conditions of vision*, only a portion of the geometrical horizontal sections of the plate. But though the space thus decreases for sight, the plate however elliptical it looks is still the same space as is touched; a fact which is verified as before by holding the plate and turning it.

All perspectives, where the thing is seen without distortion by other conditions, follow the same plan. They are selected portions of the thing presented to



sight, as in the instance of the plate. In this sense it is true to say that the real thing, in its intuitional character, is the totality of its perspectives, which are contained in it. It is not the "class of its perspectives" in the language of Mr. Russell, but it is that from which its perspectives are selected by the finite observer according to his position. It is the piece of real or geometrical space which synthesises all its perspectives. Perspectives (if no illusion or distortion creeps in) are not unreal because they are only perspectives; they are partial, and the part need not falsify the whole from which it is taken, and if it is a spatial part it does not.<sup>1</sup>

Reason  
of the  
appearance.

We have still to ask why it is that sight acts in this fashion, so as to apprehend a geometrical size at a greater distance as, in our language, a selection from the so-called real geometrical size which we touch, or which we see at a convenient touching distance. The above experiment, which shows that we see at a distance the whole extent which we touch at that distance, points the way. We have to go back to the fundamental character of any space that it is intrinsically temporal. What we see is an illuminated disc, whose various parts are at different dates because of the conditions of vision. The ends of the diameter are later than the centre. When the disc is moved off, its geometrical shape and size are unaltered, but its points *as illuminated* alter their times with the distance. Simple geometry shows that at a greater distance the time-interval between the end and the centre is reduced, because the distance of the ends from the eye, the path which the light has to travel from them, is increased relatively less than the distance from the centre is. Consequently the ends are later than the centre by so much less when the disc is far off than when it is near. Thus while it is still the whole disc which is seen in its full geometrical extent, that extent looks smaller because it is filled with the qualified events of illumination and is only apprehended through them. We see a smaller

<sup>1</sup> A word will be said presently as to why one of the visual perspectives is taken to represent the real spatial character of the thing.

disc because the disc occupies less time under the conditions of vision. Were it not for these conditions there would be no such appearance.<sup>1</sup>

We come next to the mere appearances of spatial characters of things due to the presence along with the thing of another thing. In the looking-glass (which is supposed flawless) there is no distortion of the luminous point or thing in colour or brightness. The mirror is a contrivance for seeing things not visible directly by the eye, such as one's own face, and the object seen is called a virtual image because its position in touch-space is that from which the rays of light would come if the real luminous point were there. But the seen image is a genuine sensum, seen under this arrangement.

Mere  
spatial ap-  
pearances.

It may be noted in passing that such virtual images, whether of oneself in a mirror or a stick in water, afford us an excellent commentary on the statement that a memory is the revelation of a past event as past. The optical image is not actual or, as is said, 'real,' but only 'virtual,' and is thus next door to an image in the psychological sense. The difference is that it is sensory, but it is still an actual revelation of the thing by the help of the mirror. Now in memory Time takes the place of the mirror, and it is a distorting memory to boot. There is no sensum present, only an image, but that image is the past object revealed, just as the virtual image in the mirror is the actual present object revealed. There is however a further difference which is vital. The mirror is separable from the thing it reflects. Time, however, is an essential part of the object remembered. Consequently the memories of a thing or event are its real and

<sup>1</sup> Considerations of this kind were used in Bk. I. ch. ii. in expounding the perspectives of Space-Time pure and simple. Mr. Russell has said somewhere *à propos* of the appearances of the penny that the time-element enters into the explanation, and the same hint as to this problem reached me privately from Mr. Nunn. In the above I have attempted to follow these hints and suggest what may be the lines of the solution. I am persuaded that similar considerations apply to all cases of real and mere spatial appearances, though I have not the capacity to undertake the task.

not its mere appearances, except so far as Time introduces foreign objects as well. Accordingly the memory is apprehended as past, as containing Time, whereas the mirror itself is no part of the face seen in it. This arraying of different facts in their likeness and unlikeness may be helpful to the understanding of all of them alike.

The mere appearance in this example belongs to the place of the image which seems, in reference to the Space which is touched, and also seen without the mirror, to be displaced to a point behind the mirror. We cannot say here that we see, as in the first set of examples, only a part of the real thing. We see the real thing exactly as it is, only it is displaced.<sup>1</sup> A baby may feel for the thing behind the mirror. In a well-known observation, a boy blind from a few days after birth but later at seven relieved of the cataract did the same thing. For visual Space is measured by the Space we touch. The displacement is due to the mirror, not to the selecting mind. Yet in spite of this displacement we have not two places, one visual, and one tactual, but one place which is seen luminous by the eye and may be felt by touch. Another metaphysical experiment, so simple that to call it an experiment seems ridiculous, demonstrates this. Stand before the mirror and touch your shoulder or anything which you do not see with the eye direct, but only see along with the finger in the mirror; and then ask yourself whether the touch you feel and the colour you see are not in the same place, felt in the one case and seen in the other.<sup>2</sup> If you touch a thing like a pencil which is in front of you, so that you see it direct and also in the mirror, the judgment is troubled. For the virtual image is only seen with the help of the mirror, and the real pencil is seen as well as touched; and there are thus two visions of Space at once. In the same way in the classical example of pushing one eye outwards and thus with the two eyes seeing a candlestick double, if you touch the candlestick and then observe alternately with

<sup>1</sup> The interchange of right and left goes with the displacement of Space under the conditions of vision.

<sup>2</sup> Similarly in shaving before a mirror.

either eye, you at once feel and see the candlestick in either case in the same place; but with both eyes open there is the disturbing fact of two visual appearances of Space, and the feel is located with the object of the undisturbed eye. It is only when we have the normal visual intuition of Space, that is the bare intuition of it without an intervening apparatus, that we realise that the displacement in the mirror is a displacement at all and a mere appearance. In the Space of touch and normal sight the whole of the space in front of the mirror which is not seen direct by the eye is as it were swung round so as to seem behind the mirror. But it is the same space under this mere appearance. I imagine that if mirrors were organic to us and part of our visual apparatus we should have the same view of the world as we have now, and we should localise the touches of things and the colours of them precisely as we do at present. At any rate the displacement is a mere appearance of the primary characters of the thing seen, because we do not at present see the thing by itself but in its combination with a mirror. The displacement is a real character of that combination, and so when everything is treated equally no difficulty arises.

I cannot help confessing here how much simpler it would be and how much laborious explanation it would save, if only it were true that our intuitions and sensations were mental as is commonly supposed, and how easy it is compared with our procedure to refer all these variations in part to the mind or its body. The way of sin is always easy and that of virtue difficult. But in the end the easy road leads, it is said, to destruction; and it is so here. We should be living in a world of sensations, which would be hallucinations, and of images; some would be veridical and some not. But we could only discriminate the veridical ones by means of sensation, that is by other hallucinations. For it is of no use to urge that our appearances are partly determined by the thing and partly by our bodies. How shall we know what part is due to things except through observation, for which in turn we are dependent in part upon our bodies? We are reduced to a world of consistent hallucination. But we

cannot pass from it to a world of things independent of our individual selves except by recourse to such means as were adopted by Berkeley, of assuming a God who impressed these hallucinations upon us, an assumption necessary if things are to be independent of the single individual, but otherwise rather the statement of the problem than a solution of it. Or we may suppose that thought informs us of a world of things to which our appearances are the guide. But I do not know how that thought could have experience of its object or what sort of an object it could be; and indeed the real world remains in this way an unknown. I cannot help adding that it deserves to remain so.

How there  
can be  
mistakes  
in space-  
perception.

But we are faced with a grave problem of our own. We saw that we apprehend spatial characters by intuition, because the sensory stimulus excited places in our brains which as being attended by consciousness were aware of the space of the object. No local signs are needed because the place of our sensation in the mind is aware of the place of the object sensed. How then, it may be asked, can our intuitions ever vary as they do, whether there are distorting additions to the thing perceived or not? The monad correlated with any point of the retina, that is the point-instant which is situated at the point of the visual region of the brain corresponding to that retinal point, is in communication with every point-instant in Space-Time, and it is aware of or 'knows' the line of advance of the light from the real thing to the eye. Why then should the diminution of the retinal image as the eye recedes from the disc make any difference to the intuition of the disc's size or of its place in tactual Space, which is the same real Space as the visual one? Or again, with the mirror, why does the monad stimulated in the brain by a point of light not follow the light and, knowing whence it came, see the thing reflected in the mirror where it is in reality, or geometrically? The answer is got by considering the difference between the 'knowledge' (in the extended or metaphorical sense of that term) which a point-instant or any complex of them

possesses as being merely spatio-temporal, and the consciousness in the strict sense which only belongs to them in virtue of being thrown into action by a sensory or other stimulation. The monad as such, as a mere point-instant, is infallible and any complex of them infallible: that is, in reference to Space-Time and its elements and whatever complexities there may be in it of a purely spatio-temporal and non-qualitative character. But when a piece of Space-Time is awakened into consciousness, and this is of course not possible in fact to a single monad but only to a complex of them, the case is different. As having consciousness, that is as having that quality, they are limited by the conditions under which their consciousness is evoked, and in ourselves consciousness is evoked in the first instance through sensation, though intuition pure and simple is more elementary than sensation. Hence the consciousness belonging to a piece of neural (that is mental) space is limited to the object which is presented in sensation. Though it possesses perfect 'knowledge,' as spatio-temporal, of all parts of Space-Time, it is conscious only of the space and time of its object, and that object is a sensory one as well, and has secondary as well as primary qualities. Thus we have intuition in vision only of the primary qualities of the *visual* object, and we intuit, not place or shape or size in and for itself, but the place, shape, and size of a colour, that is which is occupied by colour. The parts of the optic centre affected by the coloured patch of my face seen in the mirror do not know the real place of the face but the place of the colour seen, and they suffer variation or distortion or displacement in accordance with that of the colour. When the colour of the disc shrinks in extent with the distance, it is that extent of which the intuition is conscious.

Thus our intuitions are affected by whatever conditions affect the perception by sense of a thing. Illusion being excluded, the *sensa* are determined by the thing itself taken along with the medium by which its *sensa* are transmitted and without which as in colour the *sensa* would not exist, for there are no colours in the absence of illumination; or else they are determined by the

participation of some other thing in the total which is contemplated. The body and mind of the percipient act only selectively and do not determine the nature of the sensum. The mirror then is a contrivance by which I can see my shoulder which is otherwise invisible. The rays from a luminous point are deflected from their course and the thing is seen where seen—not in its geometrical place, which is equivalent on the whole to the place of Space which is apprehended by the touch or undisturbed eye. The conditions of direct vision are such that rays of light proceed to the eye from the luminous point. By the mirror the rays of light which reach the eye produce the same effect on the eye as rays proceeding from a point behind the mirror in geometrical Space. For vision then the space in front of the mirror is displaced by the mirror. This is the consequence of a contrivance necessary for seeing the colour at all. Hence the intuition of the place follows the conditions which determine the sensing of the colour.

We are now in face of the solution of the problem. The senses are not adapted to perceive Space but to perceive the quality of their own specific secondary qualities. The eye is not an organ for apprehending Space but colour. The apprehension of Space is a concomitant incident and is not the work of vision but of the space of the nerve centres, or of the mind, provoked into consciousness through sensory stimulation. Now the price we pay for having our intuitions of Space aroused through sense is that they are subject to whatever variations may be necessary for the proper business of vision. The same thing is true of the other senses as well, but is operative in different degrees. The proper object of the skin is pressure, not form or size; of the ears sound, and not the place of it. But the nature of the medium which renders the object at once what it is and sensible to our sense-organs affects our intuition of its primary qualities. In order that we may see the colours of a disc at a distance clearly the angle subtended at our eye according to the laws which the medium obeys grows smaller; and the like. Sight is indeed a finely discrimin-

ative means of intuiting place and form, more so than touch, and while touch remains the standard sense, sight is used in optical instruments to help out touch. But the laws of the medium subject the intuition of Space to the conditions which affect the sensing of colour, and thus produce variability of appearance in a high degree. Hearing is notoriously uncertain in its deliverances as to locality. Touch on the other hand is in contact with the thing, so far as the contact is complete—and it never is. Hence relatively to sight, we attain by touch a closer approximation to real or geometrical space than by sight. For other reasons than his we can echo the poet Lucretius, who when he mentions touch becomes lyrical and appeals to Heaven. *Tactus enim, tactus, pro divum numina sancta.*

Hence it is, namely on account of its relative freedom from variation as compared with the other senses, that in respect of the apprehension of primary qualities which it does not indeed supply but mediates, touch is used as the standard sense. We call then the real shape of the object, as we see it, that which we see when the look of the thing coincides with its touched appearance. When the touch is circular the real visual shape is taken to be the circular one; and in general it is the one we have of the object when seen from the front at about touching distance. Every visual shape belongs to the thing as well as this. But this particular shape is found to be the one whose possession accounts for the others as partial appearances of it, and is thus the foundation of them. If the disc were geometrically elliptic it would not be seen in the actual elliptic form it has when seen obliquely. But if it is really circular it would be. Moreover if it were seen circular from the side it could not be really circular. When once we have established a particular visual appearance as the closest approximation by sight to the geometrical character of the object, we can go on and draw inferences as to the geometrical character of the thing from its appearance under optical instruments like magnifying glasses or microscopes.

The  
superiority  
of touch.



Touch does but give us the closest approximation we can get through the naked senses to the real primary qualities of things.<sup>1</sup> It is itself by no means a perfect messenger of the outside world. It varies in discriminativeness for place at different parts of the skin. Thus outlines are more delicately apprehended by the lips than by the fingers, or by the fingers of a blind man, which are trained, than by the fingers of a normal person. On this varying discriminativeness are founded various illusory judgments, as when two compass points passing from the cheek so as to touch the two lips seem to move apart. Mistakes of judgment are mixed up in these phenomena as elsewhere, e.g. the familiar experience of seeming to touch two things and not a single one when two fingers are crossed, the so-called paradox of Aristotle. Even apart from all illusions whether of perception or judgment we have such variations as the one mentioned previously, that two touched points feel further apart than if the interval between them also contains touched points. Now the superiority of touch over sight, in general, is due to the nature of its object, which does not need like colour a medium but is conveyed to the body direct. Hence the variations in the case of touch appear to be due in the main to defect on the part of the sense-organ and not to any requirements like those of sight which produce alteration or distortion in the sense-object. Thus a polygon with a large number of sides may be indistinguishable to the feel from a circle. The polygon's contour has slightly projecting points, but the difference from the smooth circle is below the threshold of discrimination in respect of the intensity of the pressure, and the touch cannot discriminate their place either. That is, the point of the polygon and the point which corresponds to it on the circle fail when they are felt together or in close succession to evoke in the touch centres a consciousness which is aware of difference of locality. They may even fail to affect actually different places, owing to the arrangement of the nerve fibres to various places. Thus the circle and the polygon are

<sup>1</sup> Mr. C. D. Broad, *Perception, etc.*, has many valuable remarks on illusions of touch and vision (ch. iv. pp. 254 ff.).

confused much in the same way as two intensities of a quality of sense are confused. The case is one of defective receptivity for the external world and not of illusory appearance. That defectiveness is owing to the dependence of the places in the brain which apprehend locality upon the qualitative sense-excitements which let in the intuitions.

All our intuitions thus bear the defects of our senses. This is the disability under which we labour, which compensates the privilege of consciousness and the greater wealth of revelation which consciousness renders possible. We can sense the qualities of matter and life, but the price we pay is that we are denied the exact awareness of Space-Time which every monad has. This disability is not confined to the conscious order of existents but to every order above that of bare Space-Time. Complexity of space-time, when it carries with it in the empirical order of the world's development an empirical quality, means also that the being endowed with that quality is shut off from perfect apprehension of Space-Time. For he apprehends it, as we through consciousness, so he through his own acts with his distinctive character, and is limited by their conditions as we by sense-perception. It is only the bare point-instant, the element of motion or Space-Time, which is in sympathetic communion with the places and shapes and sizes of things. In this respect the mere monad or point-instant 'knows' Space-Time better than Newton or Laplace or Mr. Russell. Your monad is your only natural mathematician, who neither has nor needs the science of mathematics, but lives mathematically, and consorts so with his fellows. For point-instants are related to one another, so far as may be, as minds are with one another, and they know each other by sympathy. Yet this is not knowledge or intuition of Space-Time, for point-instants can no more contemplate each other than we can each other, and there is nothing below them for them to contemplate. They have no science. But what is perfect and exact communion for them is unattainable by us. We cannot

Correctives  
of defects  
of intuition.

contemplate primary qualities in their exact being, but we can have science of them and that science is mathematics. Thought in the form of mathematical science takes us back indirectly to what the monads or point-instants know directly. We in a manner get rid of our consciousness and go back to a more primitive condition.

Our remedy for the disabilities under which our intuitions labour is found in our capacity for reflection, for contemplating not merely the particular but the law of its configuration. This capacity helps us in two ways. Being aware of deviations of particular observations from real spatio-temporal fact, it invents instruments to make the observations more exact (both in respect of the primary and the secondary qualities); and though we are in the end always dependent on our senses for the observations, it devises methods, for controlling the instruments themselves and for cancelling errors of the observer, which as far as possible make us independent of our own defects. In the next place it invents science, and in particular in respect of intuition it makes mathematics. For the minute first-hand and perfect acquaintance which the monad has of the world, it substitutes spatio-temporal laws as contained in arithmetic and geometry, and their progeny. Exact intuitions of things being unattainable and also useless, it gives us something better and more valuable. Mathematics is thus engendered from the defects of our intuitions, as the other sciences from the defects of our senses. And it is the fundamental science because it deals with the fundamental material of which all qualities represent complexities. It does not as we have seen before differ from other sciences except in this simplicity of its material. Not in virtue of the hypothetical character of triangles or numbers; for all science is conversant in like manner with such hypotheticals, and these hypotheticals are not inventions of the mind but, so far as valid, universals in things—realities therefore, so far as established, and not mere hypotheses. Not because of its alleged *a priori* character. For in fact it is experimental and deals with empirical determinations of Space-Time like triangles or integers or irrationals. It

is only its material which is *a priori* and not its methods. The material is *a priori* because it is categorical; and mathematics is unlike metaphysics in that it does not explain what Space and Time are but is concerned only with the discovery and inter-connection of its empirical determinations. So understood it remains the basal science; and being unencumbered with regard for qualities it is concerned only with the laws of intuitional objects.

Nothing however can be further from the truth than the doctrine inherited from Locke that our ideas of primary qualities resemble their originals in things, while those of secondary qualities do not. The language of representation is not available for us and indeed is universally obsolete. For us ideas are things or partial selections from them (and, if we include imaginations and illusions, rearrangements of them), and we are at one with Berkeley except that whereas for him things were ideas and there are no things which were not ideas, for us reversely there are no ideas which are not, or do not belong to, things. But let us for a moment retain the Lockean conception of copying. It is then untrue that our intuitions are exact copies of things any more than our ideas of secondary qualities are. We are not less bantered by our intuitions than by our senses, and we are so because we cannot rid ourselves of the defects of our senses. It is true that our intuitions never deceive us as to quality; but that is because in the strict sense they have no quality, being merely spatio-temporal. But otherwise they are never copies just because they are provoked in our apprehension by the sensing of the sense-qualities. If we are to choose we must rather say that we are nearer to reality in our sensations of secondary qualities than in our intuitions of primary ones. For in respect of the one we are cheated at first hand and with respect to the others at second hand. In the one case we are cheated, when we are cheated, by the principal; in respect of the other we are cheated by an innocent person who is compelled to be a confederate. Our senses only cheat us by their weakness and partiality

of selection, but our intuitions cheat us because our senses are cheats.

I have thought it tedious to introduce into this discussion the variations of our intuitions of Time. There too we are restrained by the senses without the mediation of which time-intuitions would not be evoked. Very largely the variations in the appearances of Time are matters of illusion and the effect of past experience, as in the familiar illusions of the varying durations of our experiences in actual occurrence or in retrospect.

I end by repeating an observation with which I began; that all these variations of sense or intuition are but illustrations of what arises out of the relation of finites of any kind to one another according to their position in space and time, and the limitations of their organisation which prescribe how much shall be revealed to them and how much not. The history of our experience of these variations of them verifies in the special case of minds a universal rule. This is the really important result for us of the inquiry.

## CHAPTER VIII

### ILLUSION AND IDEAS

ILLUSORY appearances of things differ from other appearances in not being veridical. Real appearances belong to the thing itself and are contained in it; they are its perspectives; the thing is the synthesis of them effected in the space-time to which they belong; and correspondingly the mind in its experience of these various appearances collates them or rather discovers them to be collated without any exclusion. Mere appearances belong to the thing only under conditions which do not leave it to manifest its appearances by themselves; and, when these conditions are allowed for, such mere appearances are accounted for by the real nature of the thing taken in conjunction with the foreign thing; and are thus real appearances of the two combined and mere appearances of the thing itself. But illusory appearances do not belong to the thing of which they are appearances; and the illusion consists in their being so referred.<sup>1</sup> Only in so far are they illusory; there is no illusion until an element in the appearance which does not belong to the thing is perceived as belonging to it: until for instance the green seen by contrast on a piece of grey paper lying on a red ground is seen as an affection of the place of the grey paper. The green by itself is not illusory; but the patch, occupied by the grey, seen as green. In like

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<sup>1</sup> For the truth that illusion lies in reference of the imaginary element to the thing to which it belongs see Mr. Russell's remarks in *Scientia*, 1914<sup>2</sup> (*Mysticism and Logic*, p. 176) and again in *External World*, p. 85, which make clear wherein illusion consists.

manner the paradoxical sensation of cold from a point on the skin touched by a hot metal is not in itself illusory, but only when we feel ourselves touched by a cold thing. Hence it is that mere appearances shade off into illusory ones. To see a stick half straight in air and half bent in water is not an illusion. But to see the bent part of the stick as part of the whole straight stick is illusory. When we go further and believe that the straight stick is bent in water, we take a step beyond illusion and are victims of error. For illusion is perceptual error, or it has the same relation to perception as error to judgment. It is undeveloped error; not diverse from it, but error in the germ. Even a real appearance, like the elliptic appearance of the disc when seen obliquely, may become illusory if the disc is viewed as being actually an ellipse, that is if the space it fills is not merely seen with elliptic shape but is seen as being elliptic; and if it is believed to be really elliptic and a judgment made, there is error. So difficult is it to separate the different kinds of appearances from one another, and in particular to separate mere appearances from illusions, while illusions are first cousins to error.<sup>1</sup>

The illusory appearance of a thing is commonly said to be an illusion if the thing in question is actually present but misinterpreted, as if for instance we perceive a white shirt stretched on a clothes-line as a man returned from the dead, or feel a pencil double with crossed fingers. When the thing is not present at all we are said to have a hallucination. In hallucinations there is always a sensory excitement and not merely an ideal one. The stimulus may be purely internal and involve the sensory neural apparatus as in some reported cases of visual hallucination, or it may be external but produce an inappropriate sensation as when a cold point of the skin is touched by an actually hot piece of metal. There is however no difference psychologically in the

<sup>1</sup> An illusion is a mistake of perception, not of judgment. It is quite possible that illusions may themselves be founded upon preceding judgments, as is maintained for so many cases of geometrical illusions by Lipps. But there is no explicit judgment in the illusion itself.

structure of the two kinds of experience. In the case of illusion the thing revealed in sense-perception is supplemented by an idea which does not fit it in fact; in the other case the ideal supplement is that of the thing which normally gives the sensation. In the one case the mind supplies the interpretation, in the other it supplies the thing of which the interpretation is sensed. Hallucination is thus an inverted illusion. The mistake is discovered only by further experience of the circumstances. It may be in hallucination that there is no thing at all present corresponding to the sensory experience. It may be that something is actually present which caused the sensation but it is not the normal cause of that sensation. Both the idea in one case and the sensation in the other are, as referred to the thing, illusory objects and differ only for our purposes in respect of being ideal or sensory.

The other two classes of appearances have their source in the thing of which they are the appearances. Illusory appearances have their source in the mind itself. Mere appearances come from the interference of some other thing with the thing itself; illusory ones from the interference of the mind. They are therefore subjective in their origin, while as we shall see remaining non-mental in themselves. In other words the apprehending is initiated from the corresponding object in the first two sets of cases, but in illusion from the mind itself. Consider ordinary correct perception of a thing. The yellow colour and spherical form of the orange set going certain intuitional and sensory processes in the mind. These set up connected processes whose ideal objects are fragrance and juiciness—that is, processes to which correspond the physical qualities of fragrance and juiciness, as presented in the form of idea; the ideal and sensory elements are united within the same space-time, and we have the perception of the thing, orange. Accordingly illusion may arise if the qualifying processes initiated by the mind itself at the touch of external experience are not those whose objects really belong to

The source  
of illusory  
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the thing which is contemplated. Whenever this happens the mind interferes with the world of things and disarranges it. The mind which is free from illusion supplements what is forced upon it by elements which are verified by the things themselves when further experience supervenes. Thus there is opportunity for misinterpretation wherever the mind is defective. We cannot take in things at one moment, but only by degrees and in the lapse of time, and the thing is therefore for us always presented partly in sense and partly in idea. But our ideas are affected by whatever affects us.

The causes of such misinterpretation are many. The most obvious are custom, and the predominant interest of the moment. But every idiosyncrasy of every sort may prevent the mind from responding correctly to things: passion or prejudice, or some mental twist or perversity. These are the defects which are corrected by experience, as acquired not in the haphazard way which leaves us slaves to custom, but systematically and with precautions, or in a word, scientifically. Besides these personal idiosyncrasies which make an individual a bad observer, there are the defects which are normal and common to all persons such as operate, for instance, in some of those geometrical illusions which are so familiar and which are not merely differences of perspective. Sometimes the illusion is engendered by the limitation under which the mind labours, that it is adapted to the general case and its organisation is fixed, not by custom, but physiologically. A simple illustration is the natural illusion we have when we hold a pin close to our eye and look through a hole in a card held in front of our eyes at a source of light, which throws the shadow of the pin on to the retina. We see the pin then, on the other side of the hole, black but inverted.

The interference of the mind is not however confined to the introduction of inappropriate ideas. It may produce illusory sensations. Defects in the sense-organs and therefore in the mind, such as those of colour-blindness and tone-deafness, illustrate this. These are

personal defects and abnormal. But the abnormality of response may be universal and normal as in the paradox of cold sensation, because of the determination of the sensation in this case not by the real cause but by the fixity of the mind's response to stimulation in certain places.

In all these examples the mind itself interferes and apprehends an object that is conformable to the mental act which for one reason or other is set at work. So long as the object is contemplated in and for itself there is no question of illusion. When the mind goes on to refer these illusory objects, illusory in reference to the real thing, to the thing, then it is in a state of illusion, and we have an illusory appearance of the thing.

We may now restate the difference between illusory and mere appearances. In mere appearance we have the appearance of a thing distorted by the presence of some other thing and both things are contemplated. But in illusion the distorting thing is replaced by the mind itself, or what is the same thing its neural process or organ of sense, which in different ways are instrumental to the mind; and neither the mind nor its instrument is, in the apprehension of the illusion, contemplated. The face behind the mirror is a mere appearance of the face which is in front of it. In illusion the mind as it were carries its own mirror with it. We do not see our eyes and still less our occipital cerebral tracts, as we see the mirror. On the other hand when the mind is taken along with the thing seen, the illusory appearance of the thing is a real appearance of the combination and a mere appearance of the thing. The angel would see the illusory appearance as a mere appearance of the thing. Hence too as we shall presently see the affinity of an illusory appearance to a work of art.<sup>1</sup>

But though illusory appearances are inappropriate to or disparate with the thing to which they are perceived

<sup>1</sup> In the above I am omitting for the present illusions and other appearances in the mind itself. They are described later. I am dealing here with illusions as to external things.

Their non-  
mental  
character;  
and how  
they are  
possible.

to belong and owe their presence to the initiative of mind rather than to that of the thing itself, they are not the creation of the mind. What the mind does is to choose them from the world of reality. They also are an instance of the mind's selectiveness, only the selection is uncontrolled by that part of reality which purports to be perceived. The illusory object is as much non-mental as the real appearance. Yet it is chosen by the mind from the world of things not directly connected with the thing to which it is referred. The grey piece of paper is seen green by contrast on the red ground. The paper itself is not green. But there is green in the world. The appropriate response of the mind to green is the kind of sensory act which the mind is at the moment performing, and accordingly it sees green. Moreover the act is a sensational act and has its individuality, determined by its spatial extent and situation. It is not merely the apprehension of a universal green, as a correspondent of mine suggests ingeniously after Aristotle's dictum. I apprehend an individual sensum. The illusion consists in seeing a sensum of that quality in the grey piece of paper. But though the paper is not green the excitement produced in the corresponding places in the optic centre, part sensory, part intuitional, is the mental process which apprehends sensationally a green patch of that shape in that place.<sup>1</sup>

We can see now how illusion is possible. The object, with which the mind is brought into compresence by virtue of an act initiated by itself, is transferred from its place in the world into a place to which it does not belong. The illusion is a transposition of materials. Moreover the form of the combination is also real. I see the grey patch green and believe it to be so. The actual intuited space of the grey patch is filled with green quality according to the universal pattern of the combination of

<sup>1</sup> For this view of illusion (and error) as displacing elements in reality and combining them according to real modes of combination see Mr. Stout's paper 'The object of thought and real being' in *Proc. Arist. Soc. N.S.* vol. xi., 1910-11. His important addition to the matter is that the combination follows real lines, as well as the materials.

qualities within the space of a substance, and the same account applies to all the kinds of illusion we have mentioned. We combine elements not really combined, but both the elements and their form of combination are features of the real world when that world is taken large enough. Sometimes the dislocation involved is more thoroughgoing still. In a rational dream I have not only appearances, but things which behave in the dream-space precisely as they would in reality. They obey physical laws and are thus physical, though apprehended only in idea. The dream may be a perfectly connected and coherent set of related things. The illusion of the dream consists in the disagreement of this world of dream-things with the greater world, which is the whole world of Space-Time, not limited to this particular dream-vision of it. Everything in the dream is real, the materials of it and the ways in which they are related, including the thinghood of its things. But in the larger world they are not found in these arrangements and thus they cannot bear the test of the wider reference.

What my mental act does is comparable to the physical act of turning round and seeing an actual piece of green which is not in the first instance presented to my eyes. My mental act brings me face to face with the green in the world. Thus I do not make the green which I see in the illusory sensation or hallucination. All I do is to act in the appropriate way for seeing it. I select it out of the great external whole of Space-Time with all its contained qualities. Not only therefore is the object non-mental, but it is part of the world. The selectiveness of illusory appearances is but an extension of the selectiveness involved in all appearance. But the mental initiative leads me to select my object from a wider world of things, and the object selected is not appropriate.

A well-known psychological observation may serve as an analogy of what takes place in the mind, and as yet another metaphysical experiment. Fixate with the eyes the point of a pencil held in front, and by shifting the pencil about find out what external object is seen, by

each eye respectively, in the direction of the pencil-point and partially covered by it, when the other eye is closed. I happen thus to see two Japanese pots of different shapes at the top of the bookcase in my study. Then open the two eyes again, and the two pots will be seen overlapping each other in the same place, as if they were being seen by a single eye, placed at the base of the nose, in the direction of the pencil point. The eyes then are squinting and the two pots seen together. Now this is what happens in illusion. The mind squints at things and one thing is seen with the characters of something else.<sup>1</sup>

<sup>1</sup> 'Un-  
reality' of  
illusions.

We are therefore not free to suppose that illusory appearances are the creations of the mind or owe to it anything but their selection. They are perspectives of the real world as seen by a mind in abnormal condition. Nor are we free to suppose that there is a neutral non-mental world containing illusions amongst other neutral objects, neither mental nor physical. The real world is not got by adding something to this neutral world. The alleged neutral world is got by taking something away from the one real world. Illusions do not belong to a wider world of which reality is a selection plus an addition. Illusions are the real world seen awry or squintingly. The world of illusions is the same as what we call the real world, but dislocated, its parts taken from their proper places and referred amiss. That dislocation is the mind's own work. Illusion is due to the intrusion of the mind's own idiosyncrasies into the apprehension of reality. But it does not create but only rearranges what is already there. Hence illusion and in like manner error or mistakes of judgment are truly the result of overhaste on the part of the mind. Could it suspend its habit of reference, it would not be the victim of illusion. Descartes said of error that it was the result of the intrusion of the will into the judgment: overhaste of the

<sup>1</sup> The king in *Hamlet* admirably describes his own hypocrisy and the illusion he wishes to produce in others of his sorrow for his brother's death: "with an auspicious and a dropping eye."

will precipitated the judgment. This is perfectly true of error. Extend the explanation to illusion and we have the intrusion of personal defect of all kinds into perception. Thus all the materials of illusory percepts are real, and, if the world of reality is taken wide enough, the percept itself is a perspective of the real world, and is just as objective and non-mental as any other percept; and if it is a percept of a physical thing it obeys the laws of physics and is not merely non-mental as being neither mental nor physical, but is physical. But the percept is unreal in the sense that it is *untrue*, though like any error it is perfectly real when taken along with the mind which possesses it.

Illusions therefore introduce us to the subject of values; they are unreal as being untrue, and unreconcilable in their illusory form with the whole world of reality. To understand illusion fully we must place it in its relation to images on the one side and to art on the other. It is more than a mere image, for it contains an element corresponding to belief, though not actually belief, which belongs not to perception but to judgment. But it is less than a work of art, for it is undesigned. In virtue of the distorted selection of its materials from the real world it is a mental construction. On the other hand, whereas the work of art is designed by the mind and can be beautiful or ugly, because the mind is an essential ingredient of it; the illusory percept is as naïve as any other percept, and stands over against the mind and distinct from it. And accordingly it is not as such beautiful or ugly. Correspondingly the work of art in its turn always involves illusion. Illusion is next door to art and truth or error; but I connect it with art rather than truth and error because like art it is a perceptual object and not a judgment.<sup>1</sup> Values are to be treated in the next chapter, and we merely note here the affinity of illusion to value, to which it naturally leads on. It remains to consider images and ideas and to see that mere ideas begin to show the

<sup>1</sup> We shall see however that though the work of art is a percept, its beauty also involves judgment (ch. ix. D, p. 295).

same feature which condemns illusions to be called unreal.

Memory-  
appear-  
ances.

The images of things are appearances of things, although not sensible ones, and are included for synthesis or rejection in the space-time of the thing. As images of memory or expectation they are in part veridical, but they are in part illusory, and it would be difficult to find any cases of memory free from illusion. For the time between us and the past or future of the thing acts so as not only to produce omissions in our minds, which need not destroy the veridical character of the memory, but also to produce additions from ourselves and falsify the thing. Hence since Time acts on our images through first altering the complex of mental acts which correspond to the thing, the faults of memory may be of the nature of illusory appearance. All our images of things in memory or expectation are, it is safe to say, part true, part false. We discover the truth as well as the falsity of them by reference to the test of sensory experience, with which imagination is continuous. There is good reason for taking sensory experience as the standard, for in sense things act upon us directly, and there is no appreciable intervention of Time which throws us back upon our own initiative and may, in proportion as our minds are not faithful, introduce illusion. But though sense is pungent and compulsive, and memory or expectation pale and unstable and unfaithful, the remembered and the expected are none the less, *so far as they are trustworthy*, as much genuine appearances of the reality as the sensory ones. They are revelations of the past as past, or future as future, and to be a past object does not mean to have sunk into unreality but into the past. The past, if Time be real, has such reality as pertains to the past. Indeed while memories are outgrowths of present perception, it is also true that memories or expectations may enlarge and anticipate sensory experience. Thus features of the thing may stand out in memory which were overlooked or blurred in the hurry and pressure of sensory contact with the

thing. And imagination may by way of hypothesis or otherwise suggest features unobserved which subsequent sensation may verify.

Thus memories and expectations are equally with perceptions revelations of the thing to which they refer, and the thing synthesises and accounts for them, both in actual reality and in our experiencing of that reality. Such synthesis is also rejection of what is false in imagination or sensation. Now it is in this inter-play between sensation and idea that the distinction of images and perceptions comes to be established. When images fail to fit in within the one portion of space-time with veridical sensations, they are distinguished as being *only* images. If they were wholly veridical, the distinction would perhaps not be made. The image would be a perfect substitute for the sensory appearance. As it is they are subject to the introduction of illusory elements and are in part rejected by the thing. Thus we get to know the real characters of things in two ways; first by actual handling of them in sense, secondly because our images of them are limited or checked or even annihilated by contact with sensory experience, and with ideas as faithful to that experience. Success and disappointment are thus the two means by which the mind is led into the truth of things; and this means from the other side that things on the one hand contain or account for certain partial objects, and reject others as not belonging within their contour of space-time. Thus neither *sensa* and *percepta* nor memories are mental, but because they are non-mental they force on us the distinction between what in them is real in the thing and what is only imaginary. *Prima facie* *sensa* and images are on the same footing. It is the experience of reducing them to coherence which betrays their inadequacies, which are most obvious and ubiquitous in the case of images, but occur also in sensations when they are hallucinatory.

The illusory part of our images arises then from the liberty of the mind, released from the control established in sense by things. In constructive fancy that freedom

Construct-  
ive imagin-  
ation.



is at its height. We follow a creative impulse and imagine a result which satisfies that impulse. In doing so we may get far away from anything that we can verify in sensory experience; but the remoteness depends on the kind of impulse which inspires us. In scientific imagination as employed in the creation of hypothesis, or in practical imagination inspired by the desire to produce apparatus to serve an end, we are manifestly controlled at every point by the realities we deal with. We are using imagination with a speculative or practical purpose, to anticipate the facts presented in sense. Illusion is eliminated, as fast as it is generated, by the requirements of the task. Imagination in these cases shows itself the servant of fact, and there is no difficulty in recognising that however new the combinations struck out by desire to solve the problem before us, we are all the while handling real things in the external world. In the mere play of fancy for fancy's sake or in artistic production, the creativeness of the mind, as backed by passion or thought or both, which is expressed in our fancies and may be embodied in words or stone, seems to operate unchecked. The result does not exist in the external reality till we put it there. But fancy not only borrows its materials from reality, but as hinted in speaking of illusion, it combines them according to the laws of its materials. Thus not only do the objects of fancy obey, as in reference of an illusory quality to a thing, the categorial combinations which are universal; but it is bound by the special laws of its own creations, though the limits within which it is so bound are very flexible. To go back to an old instance, I may fancy a diamond mountain. A mountain must be made of some stone or other; I have only chosen in my freedom an alternative which never in fact exists. A fish to be a fish must have some head and body as well as a tail; I give it the head and trunk of a woman and fancy a mermaid. When we deal with error the same thing will be seen, and in a more convenient place. While thus the forms in which materials are combined are forms of combination found somewhere in reality, though not per-

haps as between the things which fancy combines in those forms, it is a commonplace that the materials themselves are so found. This is quite consistent with the possibility that, by some chance internal stimulation, imagination may envisage an object never presented to it in actual experience, some shade of colour never before perceived, or certainly some intensity of sensa which may not have been sensed. How far some positively new sensum may be fancied is a point I will not raise, but it is gravely questionable whether if the nerves have not responded to stimulation from without they can be so far functional as to present images from within.<sup>1</sup> Even so the ideatum would be a non-mental object.

What fancy does, in fact, is precisely in a speculative way what the mind does in the practical handling of things to create fresh combinations like steam-engines. We take material things and recombine them according to their own laws, which we must obey to suit our purposes. Just so in fancy, we are taking from the physical world what we find there, and reconstituting them at our will into fresh combinations. We handle them in thought, though not in practical reality. The result always contains the element of illusion in so far as it is not reproduced in its fancied form anywhere in things. But in proportion as it is scientific or artistic, it embodies in illusory garment the outlines of things as they are, like a robe which betrays the shape of the limbs. Because all great scientific imagination or artistic creation starts from realities and returns to them again, the discoverers or artists seem to themselves to owe their creations not to themselves but to inspiration from without. There are abundant testimonies in this sense;<sup>2</sup> not only do their creations come to them as it were

<sup>1</sup> See later, ch. x. p. 325, and above, vol. i. p. 333.

<sup>2</sup> I quote one such testimony from what is reported of George Eliot by her biographer: "She told me that in all that she considered her best writing there was a 'not-herself' which took possession of her, and that she felt her own personality to be merely the instrument through which the spirit, as it were, was acting. Particularly she dwelt on this with regard to the scene in *Middlemarch* between Dorothea and Rosamond, saying that although she always knew they had sooner or

from without, but in working out their fate, the authors feel themselves to be following not their own will but that of their creations. The wilder the fancy the less I suppose is this sense of government from without. But just so much greater is the measure of the illusion involved. This humility of the great is prompted by a true feeling for the situation. They are minds attuned to reality and able to anticipate it.

Assump-  
tions and  
unrealities.

From images and mere ideas we may now pass to certain other cases. First of all we may here conveniently trench upon a subject of the next chapter and allude to the whole class of what are called assumptions or supposals. In his famous book (*Ueber Annahmen*) Mr. A. Meinong has exhibited systematically the immense part played in our experience by assumption. Examples are the antecedent clause of an ordinary hypothetical judgment; or again a scientific hypothesis; a question; a fanciful representation of events, a make-believe; in all which an assertion is not made but is as it were suspended. In all of them predications are made, without the characteristic mark of propositions about reality, which is belief. It might be thought that such supposals are additional testimony to a neutral world which is neither mental nor physical; but the conclusion would be erroneous. Such assumptions stand to propositions or 'facts' in the real world in a relation comparable to that of ideas to percepts; with this difference, that ideas presuppose and succeed percepts, whereas an assumption is an inchoate proposition, and precedes it. As an idea lacks the fulness of context which a percept possesses, so an assumption lacks that reference to the whole context of reality which carries with it

later to come together she kept the idea resolutely out of her mind until Dorothea was in Rosamond's drawing-room. Then abandoning herself to the inspiration of the moment, she wrote the whole scene exactly as it stands, without alteration or erasure, in an intense state of excitement and agitation, feeling herself entirely possessed by the feelings of the two women" (*Life and Letters*, by J. W. Cross, vol. iii. p. 424).

belief.<sup>1</sup> Supposals may be either veridical or not; if they are not they involve illusion or unreality, but they remain apprehensions of reality in the same sense as ideas which also may be verified or may be mere ideas.

Of another class of objects we have had an example already in the so-called 'Spaces' of more than three dimensions. They are constructions of thought founded on the spatio-temporal conception of dimensions, which they extend by unlimited combination with the equally spatio-temporal conception of number. In themselves they are mere thoughts or ideas, and if believed to exist are fictitious or unreal. They owe their value to two considerations; one is their internal consistency, which puts them on a level with any other work of art; the other, and for our purposes the more important one, is their connection with the real Spaces from which they arise. The foundation of the elements combined in them exists in Space-Time, and because this is so, and because having ascended in thought from Space-Time we can return to real Space from our height again, they are (according to the testimony of mathematicians) useful for the understanding of real Space. They are thus in part illusory or at least mere thoughts; in part they are tied fast to real Space, and are thus once more perspectives of reality from the point of view not of a distorted mind but of a mind giving play to its artistic fancies along lines of thought which begin in reality.

We must distinguish from such legitimate fictions the idea of a great number of three-dimensional Spaces or of many Times, which has been used to cast doubt on the ultimate reality of Space and Time and condemn them to the rank of appearances of an ultimate Absolute. The Space of a hashish dream is as objective as our Space; the

<sup>1</sup> A similar conception of assumptions was stated by Mr. Russell in a paper on Mr. Meinong's book (*Mind*, N.S. vol. xiii., 1904, p. 348), but withdrawn, I believe, by him subsequently. Mr. Meinong's answer (*Annahmen*, ed. 2, pp. 132 ff.) is directed to showing that supposals are not simply ideas. I have been careful to say only that they are related to judgments as ideas to percepts. For the connection of supposal and judgment, on the conative side, in the act of willing, see a suggestion later (ch. ix. B, p. 248).

adventures of Sinbad occur in Time but not in ours. There may thus, Mr. Bradley thinks,<sup>1</sup> be a multiplicity of Spaces and Times ; and with regard to Time he even goes so far as to say that not only may there be many Times going on along with ours, but we may think a Time whose order is the reverse of ours, in which say death precedes birth. Thus it is supposed there may be on the one hand independent Spaces or Times ; on the other hand a Time of a different order. The interest of these speculations for metaphysics is different from that of the present topic, and details are left to a note.<sup>2</sup> But as regards the notion of independent Spaces and Times (an example of which is the notion we have already met of the alleged separate Spaces of touch and of vision) we have only to say that when not false like the last example they are again nothing but perspectives of one and the same Space or Time. They are certainly objective ; we cannot, as Mr. Bradley points out, correlate the time of a fairy tale with ours merely by considering the time in which the teller tells it. They are real Time or Space perceived under the conditions introduced by the subject which may distort them as in the magnification of an opium dream. The dream-time or the time of Sinbad's adventures may have no determinate date ; the fairy history occurred only "once upon a time." But the same consideration applies to the most significantly real part of our knowledge, our universal concepts. The idea of a Time reversed is, I submit, a mistake.

The next set of objects are *unrealities*, whose status has been already touched upon, but is mentioned here again for completeness, and for further remark. Such unrealities are either empirical ones like the golden mountain, which is as a matter of fact unreal ; or categorial, like the round square, which is self-contradictory and impossible, but yet can be entertained in thought. An intermediate case is that of a mare's nest. Since we can think unrealities, where do unrealities live ? If there is no neutral world of objects of thought as such, are we not driven to

<sup>1</sup> *Appearance and Reality*, ch. xviii. and ch. xxii. pp. 286, 287.

<sup>2</sup> See Supplementary Note at the end of the chapter.

say that unrels are in the real world which then must contain errors and illusions in their proper shape ? The answer is that unreality is a mark neither of neutral nor of real being but of value, and value arises within reality. When we say the round square or golden mountain is unreal, we mean that it is incompatible with the rest of reality ; we do not mean that it belongs to a world outside the real world. Unreality introduces the notion of falsity or error. The reality which belongs to the unreal belongs to it in virtue of its falsity which we shall see implies its possession by the mind, and always involves judgment. Illusion is ever on the brink of being an unreality ; and becomes so when it is believed. In its naïve character of a misinterpreted perception, it falls short of error and unreality and is simply a dislocation of elements in reality, a mentally distorted perspective of the real.<sup>1</sup>

Besides physical things which are the objects of contemplation, the world contains in itself and for us the enjoyed thing which is our mind and those other things which we neither enjoy nor contemplate directly but are assured of and acknowledge, the minds of others. Hitherto we have been dealing with physical or external things and examining what we can know of them, partly by reference to the whole scheme of things in Space-Time to which they belong, partly by reference to simple inspection of our contemplations ; and we have found the two methods to confirm each other. But we also know ourselves by enjoyment ; though we have not knowledge of ourselves, but on the contrary every act of enjoyment is a part of ourselves. I have already spoken of knowing our own mind and shall continue to do so. Now in our enjoyments of ourselves we find the same distinctions as

Appear-  
ances in  
mind itself.

<sup>1</sup> An excellent illustration of the usefulness of this method of comparing the different kinds of the objects of our experience, as if they were varieties of a species or species of a genus or specimens of development within a case in a museum, will be found in Miss L. S. Stebbing's recent paper on 'The philosophical importance of the verb "to be"' in *Arist. Soc. Proc.* N.S. vol. i., 1917-18. I do not accept all its details. It has suggested to me to add the present section by way of a fuller prosecution of the matter than I had originally written.



we find in the objects we contemplate. We enjoy ourselves in the form of intuitings, sensings, imaginings, rememberings, thinkings; and each of our acts is the appearance of the whole self as contained within its proper spatio-temporal enjoyed contour. It is not the appearance of the mind *to* itself, for it cannot be an object to mind, but it is a partial act which appears *in* the mind itself. The mind is the synthesis of all these appearances.

Not only is the mind in this way exactly comparable to an external thing, but in becoming aware of external things as a totality of appearances, sensory, ideal, or of thought, and some real, some mere appearances, some illusory, we enjoy ourselves under the same denominations. We have seen before that every categorial intuition is intuited by a categorial intuiting; that imagining an image is an enjoyment of ourselves in imaginative form, a remembered mental state is the enjoyment of ourselves in the past, just as the remembered object is an object contemplated as past. We can now see that there is the same distinction in mind between what is truly itself, even though, as in memory, remoteness makes it appear only in partial form, and what is partly due to other elements in the field of view and what is illusory. When we make a mistake about an external thing, our enjoyment is also mistaken; but we rarely notice that we are subject to illusions and errors about ourselves except when we are directly interested in observing ourselves carefully in enjoyment, as when for instance we imagine ourselves by an illusion to be advancing a man's interests from a sense of public duty when we are really doing so from friendship; or imagine ourselves to be in love with a person when, as novelists say, we are really in love with the idea of being in love.<sup>1</sup> When we separate out from our enjoyments those which are illusory in this way or mere appearances, e.g. the mere appearance that we are enjoying ourselves seeing the stick bent in water or our own face in a mirror, we distinguish between what is really ourselves and what

<sup>1</sup> This illusory condition is the standing diagnosis which the eminent K.C. makes of his clients in one of Mr. Shaw's plays: "You think you do, but you don't."

is not, that is between our true self and what is accidental or illusory.

There is however a difference between our appearances in enjoyment and the appearances of external things in contemplation; namely that our enjoyed appearances all are in the mind whether true or distorted or false. We enjoy our illusions as well as the correction of them which may ensue upon reflection, and equally, to turn to mere appearances, the enjoyment corresponding to the distorting circumstance, whether it be another external object or mere distance in time or space, is contained within the mind. Whereas the external thing does not contain its mere appearances or its illusory ones. In fact, as we have seen, our illusions are always in a manner artefacts of our own and their *reality* in the form which they possess is owing to the mind which entertains them. Thus the distinction of the true self and the unreal self is a distinction which grows up within and is contained within the self. Here we must be content to leave the matter for the present. In a later chapter, when we discuss error in general, we shall see that this state of affairs in ourselves is one way by which we can help ourselves to understand what error is (pp. 267-8).

It remains to apply these considerations as to the objective physical character of images of physical things to an ancient problem. In every experience we can distinguish a personal and an impersonal element in the situation. What is personal in the strictest sense is the act of enjoyment, which no other person but the experient can enjoy and which neither the experient nor another person can contemplate. Enjoyments cannot be shared, and are private. Objects contemplated can be shared, and in general are public. But besides the act of enjoyment which is strictly private, illusory objects are also private because they are due to the intrusion of the individual's idiosyncrasy. One man sees the ghost, another man does not see it; the first has in his mind from education or other sources the distorting idea which is peculiar to him. Even this statement is to be received with qualifications. The illusory object is private only so far as it cannot be

Public and private, personal and impersonal, experience.



shared. In the first place, though you do not see the ghost I see, the ghost is so far public that I can make it by description an object to you also, or you can understand it. Secondly, some illusory objects like colours seen by contrast are universal. Still the illusion is not strictly public. We all see the same patch of space, and we all fancy it coloured. But we do not see the same colour of the patch, for there is no such colour in the patch, but we imagine we do because our experiences are of the same sort. The same thing is true of collective hallucinations induced by hypnotising several persons at once. Hence it is that a subjectivist philosopher can maintain the idea that real things are collective hallucinations.

Sensa and images are thus not private but public, except so far as they contain illusory features. It happens that my sensum is sensed only by me, but any one else in my place would have the same sensum, if we are both standardised minds. So if we are not subject to illusion, our objects are either real appearances or mere appearances, and belong as such not to us but to the external world. Now sensa perhaps you will admit to be public. But images, how can they be so? Are they not eminently private? The answer is no, except for the personal idiosyncrasy of the imager. If you could put yourself in my place you would have the same image. Even without performing that feat which is practically not possible, I can describe my image to you and you can have the image too. If it were not so, how should we hear another person say, my memory of this event coincides exactly with yours? The acts of imaging are numerically different, but the images agree with allowance for the difference of perspective, which happens in such a case to be inappreciable. If I put myself in your place and we are both standardised, there is no difference of perspective at all. Let the image be one of a man whom we remember to have seen before in a certain place. Our images of him may be without place or date; our memories of him are the man at that place and date. It is true that memory may falsify, and distance in time and place may make us date and place the event of meeting him

differently in our two cases. But it is still the man in that place and date whom we remember under these distorting conditions. If there is no distortion the date and place coincide even in our perspective objects. If you fall into a mistake discussed before and urge that the real man is out of sight and cannot be revealed in the two images, I remind you that you only know him in imagination as his image, and you only remember him as the memory-object which you have of him. Let the man come into our presence and we should identify our images with the seen man, and though in the case of memory we should remember him as being before in a different situation in the whole of Space-Time, we should still refer both our memory-image and our perception of the man to the same contour of space-time. For though he occupies different places now and then, his contour remains the same. The individual is universal in respect of the different dates and places he occurs at, but he remains one and the same (of course within limits) because Space-Time is uniform, and though he changes his situation he retains his configuration. It is in this sense that two images of two different observers can be images of one and the same thing; and I may add that an imaged space can belong to the seen space which it reproduces. Even a virtual optical image, we saw in actual experiment, belongs to the same place as the touched thing.

Accordingly the important distinction is not that between private and public experience but that between personal and impersonal experience. The things we know are independent altogether of our enjoyments, and they reject what is imported into our objects by our personal bias, our idiosyncrasies or illusory interpretations; they are the depersonalised syntheses of the objects which are selected from them by our own or other minds. On the other hand the so-called private experience is but each man's individual perspective of the thing, and it is from the beginning (illusion barred) public. This follows at once when we are considering knowing as merely one illustration of the relations between finites. For then the perspective or private view of a thing is but the revelation

of the thing to a mind at that point of view. It follows also from simple inspection of our experience which assures us that the object is something not-mental and a distinct existence from ourselves. But according as we take one or other point of view we express our experience differently. If we begin from the world of things and consider its relation to minds, we say that ten men see the same sun, for it is the one thing, the sun, which gives the ten men their experiences of it. But from the point of view of simple inspection which is the point of view of the individual man in his position, the ten men see not indeed ten different suns but ten objects called sun, that is, they see ten different appearances of the one sun. These different objects (whether they are objects for ten persons, or for one and the same person as he occupies ten different positions) are found by experience to coalesce and be contained in the one thing, the sun, and when that has happened each can say that he has seen a different appearance of the sun. It is from the confusion of these two points of view that the belief arises that our objects are mental, the objects of imagination most clearly so and after them even the objects of sense. We do not in apprehending the *sensum* or the *ideatum* apprehend the whole thing. We say therefore, shifting over to the absolute point of view, that our *sensa* and *ideas* belong to us and guide us to things. By this confusion we distort our mental history. We know in the first instance objects; then we know things, by discovering the syntheses of these objects; then we know our objects to be selected from the things.

Intersubjective  
intercourse:  
its function.

Now were not objects (illusion excluded) public from the beginning no experience of their unification in the thing would be possible, whether for the individual or through the co-operation of many individuals. No collection of private objects, which were not already public in so far as they were altogether distinct from the persons whose objects they are, could make up a public one, any more than, as Hamlet says of Laertes' love for Ophelia, forty thousand brothers could with all their quantity of love make up his sum; meaning that his love

was of a different kind. But because the perspectives are public, their personal ingredients, if they have any, are eliminated when many objects are put by many persons into the common stock and we are left with truth. Thus intersubjective intercourse (the phrase is Mr. Ward's), depersonalises experience; but it does not change it from a private to a public experience. Nor in the individual taken by himself could his various objects, if they were merely his, give him experience of any thing or substance in which they are united. But every object being of itself public, the discovery of the thing of which it is the revelation is a matter of more experience, that is of the collation of experiences with one another so as to recognise their coherence within one space-time contour. Hence the objection to solipsism as a philosophical doctrine is not that it would isolate us from one another, or that as Mr. Bradley has shown it would equally isolate any one part of my experience from any other; and certainly not in any repulsiveness such as it seems to many to possess. Its impossibility lies in its infidelity to the facts of experience whether as delivered to simple inspection or as derived from a consideration of finite existence in general.

It might be thought that intersubjective intercourse in making us aware of things as distinct from individual knowledge of them establishes the connection of the individual mind with a universal mind for which the thing is object. Now of a universal mind experience tells us nothing, and in the sequel we shall see that when we seek to transcend finite mind we arrive not at universal mind or "consciousness as such" but at something different. Universal mind is, within our experience, nothing but the universality of mind which is its law of configuration as universality is everywhere. In truth what the combination of many objects into one thing, the recognition of their belonging in themselves to one thing, does for us in respect of mind is something different and much simpler. So far as these objects belong to one mind alone and that mind realises their unity in the thing, it correspondingly realises its own unity of substance as the substance of its

own enjoyments. We thus come by the enjoyed experience of ourselves as the totality of our acts within our mental space-time, and we learn also to exclude the elements of illusion which may creep into our enjoyments. The thing called mind enjoys and 'knows' itself just in so far as it contemplates and knows external things. In so far as the objects of many minds are synthesised in the thing, we become aware of truth on the one hand and social connection on the other. But of mind as such we learn nothing; only of finite minds we learn to know more and better.

One particular but fundamental illustration of these remarks must be mentioned again at the cost of repetition; it is that of Space and Time. Our intuitions (*intuita*) follow the same lines as *sensa*, in which they are included, and are subject to the same variations of perspective and illusion. But real Space is not public as distinct from private space. Private spaces are but public spaces as they happen to be observed by individuals at different points of view. Real Space is their synthesis, and they are discovered to belong to it as *sensa* or images do. Thus just as there is no such thing as the Spaces of touch and of sight which experience connects by a customary bond, but touches and colours which are correlated within their single extension, so the various *intuita* of Space are appearances of the one Space of which they are appearances. In the same way we do not arrive at public Time by union of private times. The private time of the events which I experience in the outer world is the one Time in which all events occur, seen by me from my angle. The universal Time is arrived at by depersonalising the perspective times of many persons, that is, correcting the illusions to which they are subject. I can say, this will not happen in my time, but it will in yours, meaning that my bit of the one Time will not last long enough to include your experience. By what means the standard Time is reached I will not pursue. Along with this reference of many times to the one Time there goes the awareness of the time-order of my enjoyments, and in the end I come to assign the time of my mind to its proper

place in the one Time which is both contemplated and enjoyed; just as I learn to locate mental space in the one Space.

#### SUPPLEMENTARY NOTE

##### ON THE POSSIBILITY OF MANY SPACES OR TIMES

For Mr. Bradley these notions are fresh evidence that Space and Time are appearance and not reality. It is all the more necessary to indicate where I think he is proceeding on a mistaken basis, because of his clear insistence on the objectivity of all these Times and Spaces. I do not know if other persons have had the same experience, but it was this very passage on the space and time of ideas which taught me convincingly the non-mental character of ideas.

Of independent Spaces and Times I have little more to say than in the text. The difficulty of recognising the spaces and times of our ideas to be in the one real Space and Time is that of dating or locating them, assigning them to their proper places. The events may have no determinate date; or they may be fictitious events occurring at a real date; or as in an historical romance the dates may be real but the events half-real and half-fictitious. In all instances, as in the supposed independent Spaces of touch and sight, the problem is not how to correlate different spaces or times, but how to correlate different sets of sensible events within the one Space or Time; or how to correlate distorted intuitions of Space and Time itself, as in the opium dream, with true physical Space-Time or with mathematical Space and Time. The synthesis by which in experience we discover the unity of Space or Time shows us at the same time how much of our space or time experiences is mere idea or illusory or erroneous.

The empirical arguments for independent Spaces or Times break down on consideration of the relation of imagination to its objects. On the other hand the *a priori* possibilities which are alleged of different orders, especially of Time, arise from neglecting the empirical character of Space-Time, like the considerations of relation discussed in a previous chapter.<sup>1</sup> Take first the notion that in the Absolute there may be included a time series of the reverse order, in which death precedes birth. This clearly neglects the empirical fact that Time within our experience is of one direction. But the thought of a reversed series in Time would have no meaning unless Time were considered as a mere relation

<sup>1</sup> Bk. II. ch. iv. vol. i. pp. 25 ff.



not between times but between events like death or birth which take place in time. In other words events like these which owe their character to the forward movement of Space-Time as we experience it are now taken by themselves independently of the Time in which they occurred, and referred to an abstract Time supposed to have a reversed order. Complex events are considered by themselves apart from the very spatio-temporal events which are their material. Death is a particular kind of motion which is supposed to go backward and to cease therefore to be death. It is fairly evident that here again the error arises from separating Time from Space. To suppose concrete events to occur in the reverse order<sup>1</sup> is to alter their spatial character as well. You could only save yourself from this conclusion by supposing Space too to be, as it were, turned inside out. But the result of that would be to leave you with precisely the same world as before, and the fancy of a reversed Time becomes gratuitous.

Nothing in what has been said conflicts with the fact that there are in our world symmetrical objects with the same character, like Kant's right-hand and left-hand gloves. But the fancy in question would require us to have left-hand gloves which fitted the right hand. This they could only do if the right hand became the left; in which case things would remain precisely as before, with perhaps a change of names.

When once it is recognised that a forward movement of Time is nothing by itself, but is a forward dating of points of Space in Time, the hypothesis of a reversed Time loses all its support. With it there vanishes also the fancy of a reversible order of causation.

We cannot then suppose that the same sensible events may occur in different worlds in changed orders of Time. But it may still be urged there are or may be contained in the Absolute different orders of Time, not on the previous epistemological ground, but on the ground that there is nothing *a priori* impossible in the supposition. Let us turn again to the empirical nature of Space-Time. It is true there are independent lines of advance; and so far different time-series are suggested. But since Time is spatial, the unity of these time-series in Time is secured by their unification in Space, by their belonging to the one Space. Occurring in the one Space, these time-series are connected in

<sup>1</sup> Of course to two individual observers, events may occur in the reverse order, the one may hear before he sees, the other see before he hears. But this is a reversal of the order of experiencing and not of that of the events experienced; and further to each observer no matter in what order his experiencings occur, for him the order of the objects is irreversible. In fact we discover the true order of events by making allowance for these subjective variations.

Time by the temporal relations between their respective places. Correspondingly the unity of all Spaces is secured by their belonging to one and the same time-series. The independent lines of Time are thus unified when they are taken along with their Space. If we once separate Time from Space we may doubtless conceive the notion of various time-orders which are unified in the Absolute, not in time (it is not suggested in space), but in some other way to us unknown. This leads to the contradictory conclusion that several moments of time which for the Absolute are each 'now' in its own series are not identical instants. Whereas if an instant is treated as being also a point, we may have the same instant repeated at many (indeed at all) points and the same point occurring at every instant. Thus when Time is regarded as it must be spatially, there are no Times which do not all belong to the one Time, belonging as they do to the one Space. Repetition of instants in Space is in fact a feature of Space-Time.

If any one still insists on a possible multiplicity of Times or Spaces, he can but assert that the whole of Space-Time is repeated in the Absolute. In other words the Absolute contains the same world over and over again. Such an absurdity it needs not be said is not contemplated by the absolutist theory. And yet when Space and Time are undivorced, that is the only way in which we can have a possible multiplicity either of Spaces or Times.

No one has contended more forcibly than Mr. Bradley for the Kantian principle that the possible is only what may be thought in accordance with the conditions of experience. It is just because neither Space nor Time is taken as it presents itself in experience, each united with the other, that he has been able to indulge himself in the hypothesis (to which of course he does not attribute reality) of different worlds of Space and different orders of Time.



## CHAPTER IX

### VALUE

#### A. TERTIARY QUALITIES IN GENERAL

Values arise  
from amal-  
gamation of  
mind with  
objects.

THE study of the appearances of things has introduced us to the distinction of truth and error and brought us into contact with the region of values. For illusory appearances have been seen to lie between veridical ideas or images and errors. In themselves, as appearances, they are perspectives of the real world from the point of view of a mind diseased; they are objective and non-mental and owe to the mind nothing but their selection from the real world. They have all the characters of reality, and like other ideas are claimants to reality, awaiting sentence. When they are believed, when, for example, I say not merely that I see the grey paper green, but that the paper is really green, they are errors, and are false or untrue beliefs. As half-way towards errors (and they are always on the point of being believed), they are rightly called unreal. For reality, as will presently be urged, is a compendious name for Space-Time and whatever occupies it. But illusory appearances, in the form in which the appearances present themselves, do not *truly* occupy Space-Time. Thus they may be described either as embryo errors or undesigned works of art. We have thus to investigate values and to ask in what sense they belong to things and what their spatio-temporal foundations are.

The so-called tertiary 'qualities' of things, truth, goodness, and beauty, are values (and for us are the most

important of the values<sup>1</sup>), and imply and are unintelligible without a contrast with their unvalues of error, evil, and ugliness. These values are not qualities of reality in the same sense as colour, or form, or life. Reality is not true nor false; it is reality. Not even is the mental state of illusion or error as a reality true or false; it is a mental reality. Objects are illusory or unreal only in relation to the mind which has them. Facts are true only in relation to the mind which believes them. In the same way there is no goodness in a physical fact as a mere external reality; its goodness, say it is the fact that a wall is built, lies in the relation it has to the practical mind which wills it, to its being the honest work of the mason. Things are good only in so far as we extract their goodness by using them to our purposes. That physical things are beautiful only in relation to us is a proposition which may seem paradoxical and even revolting, and it needs and shall receive its justification, when it will be seen that a landscape has beauty not in and by itself, but in the same way as a poem has beauty, which is made by a man and when it has been made is also a physical thing, outside the maker. That truth and reality are not the same thing, but that truth belongs to real propositions only in their relation to mind, may to some seem obvious and to others false,<sup>2</sup> but I shall maintain that though not obvious it is true. Consider the proposition that this rose is red. The rose is real, its redness is real, and the redness belongs really to the rose. The elements of the proposition and the fact that they belong to each other are altogether independent of me. This rose would be red whether known to me or another and before there were eyes to see it. But the proposition is *true* only if there is human *appreciation* of it. Similarly the colour of the rose belongs to it irrespective of any human

<sup>1</sup> Their relation to the other so-called values will be discussed later in section F of this chapter.

<sup>2</sup> In my articles on 'Collective willing and truth' (*Mind*, N.S. vol. xxii., 1913), which are freely drawn upon in this chapter, I still assumed truth and reality to be identical. I have since learned better.

spectator ; but it is not beautiful except for a contemplating mind.

Secondary  
and tertiary  
qualities.

Values then are unlike the empirical qualities of external things, shape, or fragrance, or life ; they imply the amalgamation of the object with the human appreciation of it. Truth does not consist of mere propositions but of propositions as believed ; beauty is felt ; and good is the satisfaction of persons. In dealing with mere knowing we have had on the one side the knowing subject and on the other the known object, the two in compresence with one another and distinct. We have values or tertiary qualities in respect of the whole situation consisting of knower and known in their compresence. Strictly speaking, it is this totality of knower and known, of subject and object, which is true or good or beautiful. The tertiary qualities are not objective like the secondary ones, nor peculiar to mind and thus subjective like consciousness, nor are they like the primary qualities common both to subjects and objects. They are subject-object determinations. It is the fact believed after a certain fashion which is true, and the person who believes truly is the mind whose believings are determined in a certain fashion in accordance with the objects. It is the object which pleases after a certain fashion which is beautiful, and the person who feels aesthetically is he who feels after a certain fashion for certain objects. What this certain fashion is, it remains for us to describe.

But the amalgamation of subject and object, the reality constituted of the two is diversely close. In truth, the appreciation is determined by the object, for reality is for knowing discovered, not made, and our appreciation of its truth follows reality itself. In goodness, since we are practical and make the results we will, always subject to the laws of external reality, good is determined in the first instance or primarily by us. Hence in common speech we say either that the objective beliefs are true or that the person believes truly, as if truth belonged indifferently either to the knower or the known. But while we call the beliefs true, it would seem unnatural to call the acts of believing true ; we say merely we believe

truly.<sup>1</sup> On the other hand in morals we call the mind's action good by preference and we do not regard the object willed, like the building of the wall, as possessing goodness but as being 'a good.' In the case of beauty the connection between mind and object is much more intimate and the beautiful object is not merely considered along with its contemplating subject, but they are organic to each other. The object then seems to us to possess as it were a new quality, comparable to that of colour. It is charming as well as red or sweet.

We have to inquire what characters they are in the object which fit it to enter into this amalgamation with our appreciations, and again what the nature of the appreciations is in correspondence with their object. At present let us deal with the appreciations. They arise out of intercourse between minds. For without that intercourse the individual mind merely finds itself set over objects with which it is compresent, but does not recognise that in certain respects they owe their character to the mind. We only become aware that a proposition is false when we find it entertained by another and our own judgment disagrees with his. We then are aware that it is not merely possible for us to make mistakes, as we find ourselves doing in the course of our experience, but that an error may be somehow a real existence. Thereafter, when, with this consciousness, this acquaintance with error, we turn our minds upon ourselves, we can judge ourselves with the eyes of the community, and recognise that we are or were in error. We judge ourselves, in enjoyment, as if we were in our mistake another person. In our better mind about the same reality we represent the collective mind, and our worse mind was then the victim of error for us, and the object of its belief an error or erroneous. Thus we do not merely need other minds to supply us with facts which may escape

Appreciations arise from the community of minds.

<sup>1</sup> Or, as Mr. J. S. Mackenzie reminds me (*Constructive Philosophy*, Bk. I. ch. viii.), 'rightly' or 'correctly.' I am not, however, inclined to accept the distinction he draws between correct beliefs and true judgments.

our notice because of our short life and limited opportunities. We need them for thinking truly in order that we may learn the very contrast of thinking truly and falsely. In the same way and more obviously, my appreciation of a certain end or object secured by practice as being morally good arises in social intercourse, which presents me with persons who have willed incompatible ends, or who will ends of the same sort or compatible with mine. They and I approve certain ends and secure them; they and I secure other ends which fail of approval. Such ends are judged bad whether secured by myself or another. But it is by this contrast between different ends and the wills for them that the appreciation of good and bad arises. Thereafter, just as with knowledge, I may be myself the representative of the collective mind and, when I have willed certain ends myself, may condemn myself and call the end bad and myself who will it bad also.

It is social intercourse, therefore, which makes us aware that there is a reality compounded of ourselves and the object, and that in that relation the object has a character which it would not have except for that relation. The rose is red whether we see it or not; and a man dies whether naturally or by our act. But the redness of the rose is judged true, and the dying of the man by our act is judged a wrong, only through the clashing and confirmation of our judgments. Hence it is that these experiences of apprehending truth or error, goodness or evil, beauty or ugliness, are the culmination and the most potent variety of the experiences of co-operation and helpfulness, or conflict and dissidence, whereby we come to be aware of the existence of other minds or selves as well as our own, or to speak more accurately of ourselves as merely one unit in a group of selves. In judging our objects as true or false, right or wrong, beautiful or ugly, we attend to ourselves as like or different from other selves.

Values then or tertiary qualities of things involve relation to the collective mind, and what is true, good, or beautiful is not true or good or beautiful except as

so combined with the collective mind. By collective mind I do not mean a new mind, which is the mind of a group. There is no sufficient evidence that such a mind exists. It is but a short symbol for that co-operation and conflict of many minds which produces standards of approval or disapproval. Appreciation is exercised by the individual mind in agreement with other minds which like him judge well, and in disagreement with minds which judge ill. A mind which judges according to the standard is a standard mind. For convenience we may think of the standard as embodied in the fiction of the impartial spectator beloved of the eighteenth century, who is not subject to the weaknesses of varying individuals but represents the judgment of the collective as a whole. The mind which appreciates value judges it coherently with other such minds and is a standard mind; the mind that appreciates amiss judges incoherently with the standard mind. Only, a standard mind is not like a standard machine, one of which all minds are repetitions. On the contrary, it may have in certain respects a highly individual part to play. Thus a man may be scientific and judge truly though he is confined to one special branch of knowledge; or in practice he may have special gifts which mark out for him special duties in life; or he may be perfect in miniatures and incapable of the grand style. What makes him a standard man is that whatever his rôle he performs it consistently with the common requirements, which approve in turn of his specialising. He possesses in other words the spirit of truth and goodness and beauty.<sup>1</sup>

But while the appreciation of the mind is needed to make the object true or good, to give it the character of truth or goodness or their opposites, there is a corresponding character in the object, of which in our appreciation of it we are aware. Just as we apprehend a thing as

The character of the object of value.

<sup>1</sup> The most striking statement of this which I know is in a paper of Mr. J. MacCunn on 'Local Patriotism and Education,' in his *Ethics of Social Work* (Liverpool, 1911), especially p. 117. His point is that the life of the student is his contribution to citizenship.



spatial through intuition or as coloured through sense, so we apprehend through appreciation or valuation a corresponding character in the object of our appreciation. Contrast the beauty of an object with its pleasantness. Sugar is pleasant simply because it gives pleasure; to call it pleasant means nothing more than this. There is no quality of pleasantness in the sugar in addition to its taste or nutritive properties. The pleasantness is the effect produced in us by these qualities. So far indeed as the pleasantness of a thing lies in its relation to us, pleasantness is an anticipation of value on a lower level. There would be no pleasantness in the sugar were there not living bodies which it affects. But beauty is not merely the ability of a thing to please us, still less to give us merely sensuous pleasure in virtue of its sensible qualities. Beauty means ability to please in a certain way, in such a way as to call forth the appreciative aesthetic judgment. There is some character then in the beautiful object which it possesses over and above the characters which it has as an object of sense or mere thinking; this character is the object of the act of appreciation. The pleasure which the sugar gives me is an affection of myself (my body) apprehended in the consciousness of pleasure, and it is not a character of the sugar. But my appreciation of the beauty of a poem, while it carries with it all kinds of sensible pleasures, though it is itself a pleasing act of mind, is a reaction to something in the poem itself. In like manner, any reality is real and known for such, but a proposition to be true or false has a character of its own which is revealed to the act of appreciation by the collective mind.

We shall have to indicate what it is in the object which qualifies it to be the object of collective appreciation and so to receive in this combination the character of truth or goodness or beauty. We shall find in each case that it is coherence within the object of value. Thus there is no truth nor goodness nor beauty in reality by itself; there is only reality. Reality cannot be either coherent or incoherent. But there is coherence in knowledge, in

acts of will, in the productions of art or in the beautiful aspects of nature.

Yet this objective character in objects of value, this coherence amongst our perspectives of reality, differs from qualities of things. These are indeed selected by the mind, as when in looking at marble we see its colour but not its hardness, but they are selected from the thing. But coherence and incoherence, though founded in reality, are themselves the results of our selection. For objects of value, as we shall see, are judgments or imply them. Now in judgment, unlike perception, we dissect to reunite: we single out some aspect of a thing and then assert it of the thing. We unpiece the world in order to repiece it. Thus the value of the object, its coherence, is not something which is already in the things themselves, but is born along with the act of appreciation. Values are therefore mental (and the tertiary qualities are even human) inventions, though like all inventions their materials are independent of the inventor. The property of coherence in the object of value belongs to it in so far as the valuing subject appreciates it. But it remains a property of the object distinguishable from the act of the subject though not existent apart from the subject. Values thus belong to the object as it is possessed by the mind and not outside that relation. This distinguishes value from pleasantness, for the qualities in the sugar which made it pleasant are actually in the sugar irrespective of the mind to which it gives bodily pleasure.

We cannot regard value then as a *quality* of things, as if real things were true or false in themselves, and truth or falsity were perceived like colour or taste or life. What we apprehend in objects of value is their coherence. There is no new quality of things called truth or beauty. How then is it that truth and goodness and beauty appear to be a distinctive flavour of things? It is because coherence satisfies. There are three elementary tendencies of which tertiary qualities are the satisfactions and dissatisfactions: the tendency or desire to learn which is curiosity, the desire to do, and the desire to produce or

The experience of values. Values are not qualities.



give expression to ourselves in outward form. In so far as the mind in its appreciations possesses its objects these desires are gratified, and it is the glow or warmth in which the satisfaction of these tendencies issues which may make us fancy that value is something more than mere coherence whether in the object of value or in the subject of appreciation. We may describe truth in knowledge as its satisfactoriness to the knower; but we must beware of inventing a quality of satisfactoriness; just as much as of supposing that pleasantness is a quality of something which is sweet to the taste. The character which satisfies aesthetically or morally or, to use the usual but infelicitous word, logically, is the coherence of the object, and this as we have seen exists only in relation to the subject.

The reality  
of values.

The tertiary qualities, truth and goodness and beauty, though they differ from the secondary and primary ones in being creations of mind, are not the less real. They belong strictly to an amalgamation or union of the object with the mind. But their dependence on the mind does not deprive them of reality. On the contrary, they are a new character of reality, not in the proper sense *qualities* at all, but *values*, which arise through the combination of mind with its object. What experience of every kind is often thought to be, namely, something in which mind and its object can be distinguished but cannot be separated, so that there can be no space nor colour without an experiencing mind, is true of values but nowhere before. In our ordinary experience of colour the colour is separate from the mind and completely independent of it. In our experience of the colour's beauty there is indissoluble union with the mind. It might be thought that to admit value to be the work of mind is to give up the case for believing colour and the other secondary qualities to be independent of it. This would be a misconception, for the cases are not parallel. If colour were, as it is alleged to be, the work of mind, we should have the unintelligible result that a set of vibrations is seen not as vibrations but as colour. No such paradox arises in seeing the colour beautiful. For the colour in being judged beautiful is

still seen as colour; its beauty is a character superadded to it from its relation to the mind in virtue of which it satisfies, or pleases after a certain fashion, or aesthetically.

The tertiary qualities are as real as the primary or secondary, but more complex in their conditions, and they are not properly qualities.<sup>1</sup> Strangely enough it has been thought that if they depend, as in our view they do, on mind, and are its creations through social intercourse, they are therefore in some way unreal; as if the combination of two realities could beget an unreality. The mind is the highest finite empirical reality we know. Strange that its touch should be thought to de-realise its creations. The misconception would appear to be the lingering on of an old tradition. When the ideas of primary qualities were believed to be copies of reality, and those of secondary qualities merely the effects produced by realities upon our minds, reality belonged in a special way to primary qualities, and secondary ones were merely subjective and not real. It seems to be thought that values because they do not exist without minds are similarly subjective, and with nothing in reality corresponding to them. But for us mind is one of the realities, and is itself in the end a complex of Space-Time stuff. Values arise in the relation of these realities to other realities, in virtue of which a fresh reality is constituted. The simplest example of a reality which is compounded of mind and a non-mental thing is the 'person' itself in which mind and body are connected together, and the person is neither the subject-self alone nor the object-self alone, but the union of the two; it is the body along with the consciousness of it or the consciousness along with the body which is its object. In the same way we have a reality which is not merely the fact that water boils at 212° F. but that fact related to the mind which believes it, or to put the same thing otherwise that fact as possessed by the mind, that is, a truth. Or we have a statue of a certain form which in its relation to the mind which judges it beautiful is beautiful. The realities which furnish objects of the appreciation of value

<sup>1</sup> The primary qualities are not, properly speaking, qualities either. (See above, ch. ii. p. 56).

are thus joined to the mind or organic to it (though in various degrees of closeness in the connection) in like manner as the body is conjoined with the mind in the personal experience.

Strictly speaking, it is this compound whole to which value belongs. And in each such whole we can distinguish on the one side the object of value and on the other the valuing subject. As in this relation, the value, truth, goodness, or beauty is attributed to the object, known or produced; the appreciating subject thinks, wills, or judges accordingly. Values have thus a status of their own different from that of either primary or secondary qualities.

In dealing with the other empirical problems we have at the beginning indicated the place of the feature discussed in the whole empirical system. It would be natural, following this plan, to show that the tertiary qualities do not stand in the world unique but have their analogues on lower levels. This would, however, be difficult to do without further explanation. I shall try first to show in some greater detail how the different tertiary qualities verify the general account given of them; and in particular in what different ways the subject is united with its object in the three cases.

### B. TRUTH AND ERROR

Reality and truth are not identical, and they are differently apprehended by the mind. The real is Space-Time as a whole and every complex or part within it. Our consciousness of reality is the consciousness that anything we apprehend belongs to Space-Time. For nothing in our experience, as we have seen, is isolated and stands absolutely by itself, but is apprehended with its surrounding fringe of Space-Time. We are aware of our own reality so far as we enjoy ourselves as a part of Space-Time belonging to the whole; the objects we contemplate are real in our experience in so far as they are apprehended as parts of Space-Time distinct from ourselves. This distinctness of external objects from ourselves gives to our experience of non-mental reality the consciousness we have of being controlled from without or objectively. The non-mental reality is something which as occupying a part of Space-Time distinct from ourselves is something which we accept as given, and whose shapes and qualities we follow in our awareness of it. Such recognition of the given is the speculative shape assumed by the necessities of practice. In order to act we must obey. Stone walls do not imprison our imaginations, but they imprison our bodies and therefore control our perception of the walls. For perception of an object is the speculative side of practical response to it. This consciousness of control from the object is indeed not the consciousness of its reality, but only of its not being ourselves. But it accounts for the importance of sensation, with its vivacity and intrusive character, its manner of "breaking in upon us," in assigning the different appearances of separate things to their right places.

Reality is, then, experienced whether in enjoyment or contemplation as that which belongs to Space-Time, or

Reality and truth.

Belief.

the character of reality is the character of so belonging. So much for the perceptual experience. When we judge, our consciousness of the reality of what we judge is experienced in belief. Belief, in a judgment (and whenever we judge we believe), is the awareness that what is judged belongs to Space-Time as a whole. So far there is truth in the analysis of judgment performed by Mr. Bradley, that every judgment is ultimately about the whole Reality.<sup>1</sup> In believing that the rose is red, I am aware that redness belongs as a quality within the space-time of the rose, and that this space-time is a part of the whole. For judging is the speculative side of volition, and what is willed in willing is the proposition or object judged.<sup>2</sup> The object of the will to strike a man is the proposition 'the man is struck,' or 'I strike the man.' Now the process of willing is this: there is first the act of preparation for my end, to which corresponds the assumption or supposal of the end, the supposal that the man is struck. Willing occurs when this preparatory act, which is a relatively detached portion of myself, is clinched with my whole self, and we have the consciousness of consenting to the act, the so-called *fiat* of the will. The preparation for the end then becomes effective and passes into performance. In being adopted by the self the assumption becomes a judgment, the mere predication becomes an assertion, and the belief is the speculative aspect of the act of consent. Correspondingly the judgment, 'the man is struck,' is recognised as belonging to the world of Space-Time of which my contemplated self is a part, and which surrounds that self as a fringe. Believing is thus the *fiat* of the speculative will, and its object is the reality of what is judged as a part of reality in general, *i.e.* asserted instead of merely being predicated. Seeing that percepts and

<sup>1</sup> I say so far, for it is not I think true that in judging the rose to be red, I attribute to Reality the rose-being-red as an ideal content as Mr. Bradley thinks. Rather the case is that I attribute the redness to the rose which, itself spatio-temporal, is recognised in belief as a part of Space-Time, vaguely adumbrated as a whole.

<sup>2</sup> See before, ch. iv. p. 122, and the reference to *Brit. Journ. of Psych.* vol. iv. 'Conational Psychology.'

memories are undeveloped or implicit judgments, we may, without impropriety, also say that we believe in our percepts and memories, or that these come to us with a "coefficient of reality," which is the awareness of their belonging to Space-Time as a whole.

To be real then is to belong to Space-Time, as our hypothesis implies and experience attests. The apprehension of truth, and of what corresponds to it on the perceptual level, arises when we proceed to sort out our spatio-temporal objects into their groups. For then we find that our objects do not all of them belong to Space-Time in the form in which they pretend to belong to it, or in the places to which they make claim. Some of our objects are illusory; they are real so far as they are perspectives of Space-Time, but they contain an element introduced by our personality, and do not belong where they seem to belong. We become aware of the difference of real appearances and illusory ones or mere images. In like manner we discover in sorting out beliefs that some are erroneous. They are still believed and we have the consciousness of their reality. For errors are believed, and error differs from a lie by its sincerity. But their objects though rooted in reality do not belong where they seem. In some judgments we apprehend reality truly; in others falsely or erroneously. This contrast of true and false judgments, and that of reality and mere images, are of the same order. We do not, however, call percepts true, because a percept contains no judgment; it contains only the germ of judgment, for in the percept the elements united in it are not apprehended in their relations, that is, with a consciousness of their relations as such.

The act of judging or believing stands in us over against its object, which is the judgment, proposition, or belief. None of the names is free from ambiguity: 'judgment' has the usual double application either to the act or its object or both combined; so too has 'belief,' though 'beliefs' in the plural stands for what is believed; 'proposition' contains a reference to

The object  
of judging.

language, and 'propositum' would be a better, though a pedantic name. The best name of all is 'fact,' were it not for the awkwardness of describing erroneous judgments as facts. For what is judged is a fact or claims to be one. Now, a fact is a relation whose terms are at once apprehended in distinction and referred to the reality to which they both belong and thereby to reality as a whole. This reference is the element of assertion. 'A's going down the street' is a relation which I perceive; 'A is going down the street' is the same relation judged, and is a fact. The same relation which is apprehended within reality in the percept is apprehended explicitly in the judgment. The difference in contents of the judgment from the percept is in the form. It is from the idea, or rather from the supposal, that judgment differs in its material, for it adds to the supposal the reference to the whole reality.<sup>1</sup> The judgment is the percept dissected and reconstructed; it is not merely a perspective of reality but a perspective containing an assertion: I shall say, an asserted perspective.

But the unpiecing and repiecing contained in our apprehension of the asserted perspective does not make what is judged a creation of the mind, any more than counting makes number so. The pieces and their unity are contained in the reality. Accordingly, when we judge physical objects, the fact which is judged is the actual physical relation. The propositum, 'Caesar crossed the Rubicon at such a date,' is not different from the actual event so described which happened in the past, save of course that it is only a perspective of that event. And since universals are plans which really subsist, the presence of universals in propositions: 'this rose is red,' 'this red thing is a rose,' or even 'the lion is carnivorous': does not make that which is judged less a fact. The singular proposition is a singular, the universal proposition

<sup>1</sup> I believe, therefore, with Miss Wodehouse (*Presentation of Reality*, Cambridge, 1910, ch. xii.) that the difference of supposal and belief is not merely, as Mr. Meinong thinks, one of mental attitude but of the contents of the object.

a subsistent, fact. On the other hand, just because in judgment the percept is unpieced and repieced, because the perspective is asserted and is declared to be, as such or as stated, real, the fact cannot be apprehended without raising the question, Is it truly real? Facts are not true or false, but of a fact we must ask, Is it truly a fact as it claims to be?

Besides the non-mental 'facts' which are propositions or beliefs, there are mental facts which consist of enjoyments, related to one another under all the forms of the categories, which may be called mental propositions. They are not the objects of believing but they are the judging itself. They are, in the strict sense of that word, the contents of the act of judging. Truth and error are possible with respect to enjoyed propositions as well as contemplated ones. But I shall deal first with contemplated propositions and return later to the mental ones. The science which systematises mental propositions is psychology.

What then do we apprehend in apprehending the truth of a judgment?

We may ask the question, what makes truth? in different senses. We may mean, what propositions must I believe to have truth? The answer to this question is supplied by the sciences, including the science of philosophy. Every science consists of a body of propositions organised and systematised in a certain fashion, and in so far as these propositions are related to the mind which contemplates (or enjoys) them. That is to say, a science is all the true physical (or mental) facts belonging to any department of reality, in so far as they are the possession of minds which think truly. Physics is the universal and particular facts comprehended within physical existence, regarded as true, that is, as possessed by minds which are scientific. Outside the relation to the minds which know them, and without which they would not be true, there is nothing in a science but that reality with which it deals.

The other meaning of the question is, what makes

What  
makes  
truth true.



truth true? This is the question to which metaphysics has to supply the answer. There is a further question which is answered by the science of logic: what are the relations subsisting between the propositions of any science in virtue of which they assume their systematic form? We are dealing here with the abstract or philosophical question.

Not correspondence to reality.

There is one mode of answering this question to which we are compelled by the whole spirit of our inquiry to give short shrift. It is the so-called correspondence theory of truth: a proposition is true if it agrees with reality, false or erroneous if it does not. For how shall we know reality and bring our beliefs to that test, except in the form of other propositions? If the reality is something other than what appears to us "by all the ways" of sense, ideas, imagination, memory, conception, judging, it cannot be appealed to. Our beliefs are then conceived to float as it were midway between the actions of our minds and some reality to which we are perhaps said to refer. They belong somehow to the mind and are not distinct non-mental existences, which they truly are, just as are the objects of our sensings or rememberings. On the other hand, if truth is tested by reference to other propositions the test is not one of correspondence to reality but of whether the proposition tested is consistent or not with other propositions. This is the test of 'coherence.'

But coherence.

Our answer must be that truth and error depend in any subject-matter on whether the reality about which the proposition is conversant admits or excludes that proposition in virtue of the internal structure of the reality in question; that this truth is apprehended through intercourse of minds of which some confirm the true proposition and reject the false, and that truth is the proposition so tested as thus related to collective judging. Any reality is an occupation of Space-Time in a particular configuration. I call that its internal structure. Propositions made about this reality are asserted perspectives of it. True propositions belong to the reality; false ones introduce elements from elsewhere. True propositions

are thus also real; but their truth is different from their reality. True propositions cohere; or rather false propositions are incoherent with true propositions and are rejected by us. But that rejection is determined by the reality itself, for it is by experience of reality and experiment upon it that the propositions become sorted out into groups. The one group, which the internal structure of the reality allows us to retain, are truths; those which are rejected are errors. The rejection of error is performed at the guidance of reality through the clash of minds. For the reality itself cannot be said to exhibit incoherence, since all occupation of Space-Time is orderly. Nor can the reality be said to reject an erroneous proposition; it only exhibits features which are different from those contained in the error and compel us to reject belief in the error. The conflict and co-operation is between the perspectives or judged objects as possessed by the observing minds.

All the propositions which are asserted perspectives of any subject-matter are the beliefs about it. The aggregate of true beliefs is knowledge, and as exhibited in their inter-relations the knowledge is science. It is a complex system of facts, some singular, some general, some descriptive, some explanatory, forming an inexhaustible total. Moreover, when the subject of the science is sensible, some of its propositions deal with things in their sensible characters. A science always begins by being a collection of propositions with sensible material, and to the end it is never a mere organisation of universal propositions, though these are its highest achievements. Hence the part played by sensible verification in the discovery of true knowledge. Now it is the selection of such propositions by the minds which believe truly, which makes the propositions true; the error is not a real fact but a pretender which is rejected. Hence since knowledge and science are generally understood with the implied emphasis on their truth, they are not reality itself but that reality as possessed by minds. But the propositions themselves which possess the character of truth are real facts contained within the

What a science is.

reality investigated, and when their truth is disregarded they are not different from reality. Apart from its mere registration in books, a science such as physics is nothing but the actual world as more fully revealed to us than to ordinary observation, in its details and inter-relations, as they are contained in propositions singular and universal. This does not mean that he who possesses physical science carries the physical world about with him, but only that he is compresent with it. Propositions, like other cognita, are perspectives of the world, and when they are true are really in it, and in the places where they pretend to be.

Coherence  
as deter-  
mined by  
reality.

To verify this account of truth, let us take the simplest case—that in which the subject-matter is a singular existent, judged in a singular proposition, 'this rose is yellow.' If the rose is really yellow its internal structure is different from that of a white rose, and it compels us to reject the attribution to it of whiteness. The agreement of many persons in the belief that the rose is yellow and not white does not make the rose really yellow, it only follows that reality; but their discovery that it is yellow and not white, as believed by some one else, makes the belief 'the rose is yellow' true and 'the rose is white' an error. Here the sphere of reality is no more than the colour of the rose. The erroneous belief accepts from somewhere in reality as a whole the colour white, which is one of the alternative colours of things in general and roses in particular, and attaches white to the rose. Owing to some defect in the erroneous observer, whether of sense or of carelessness or haste, instead of seeing the colour which is before him in the reality, the yellow rose, he as it were squints at reality as a whole, and his mind is compresent with white instead of yellow. One eye sees this rose in its shape; the other sees not the yellow within the shape but a white. Thus two new realities have come into being; one is the union of the real yellow rose with the mind of a true observer; the other is the union of reality, though not merely this particular reality of the

yellow rose, with the mind of the observer who squints or has a twist in his mind. That reality is the erroneous belief; it is the artificial product of the mind and reality as a whole, which contains this rose and colours and relation of the rose to colour—the fact that the rose has some colour, as that fact operates on a twisted mind. The true belief in so far as true is equally an artificial product of reality and the minds which suffer no twist. Which of the two new realities is true in respect of the subject-matter, what is the colour of this rose, is settled by the experimental testing of the rose, but the distinction of truth from error consists in the rejection of the false belief by those who hold the true one. Thus the proposition 'the rose is yellow' owes its reality to itself, but its truth to the rejection of the error, which takes place in the refusal by the true minds of the erroneous one.

When we pass to a more complex subject-matter such as life or living beings, we find the same mark of error and truth as in the simpler case we have just discussed. Here the intrinsic structure of the reality, the relations between its parts, is expressed by a multitude of propositions instead of a single one. True propositions are those which settle down into a system with one another; errors are propositions which do not cohere with the rest and are discarded. But what is this incoherence of the error? For by calling it incoherent with true propositions which are real we seem to be making the error also real, in the erroneous form which it has. The error, however, only has reality as being possessed by the mind. Accordingly, it is incoherence which must be accounted for in order to understand what is meant by coherence. Now, a proposition is incoherent with other propositions about that reality, in so far as the internal structure of the reality is different from the features contained in the erroneous proposition; and this is discovered by experiment. Physically, the thing judged is in a certain respect different from the property imputed to it in the erroneous judging. Take for example the erroneous belief that an animal can live

in an atmosphere deprived of oxygen. Experiment shows that life ceases in such an atmosphere. The proposition which declares that an animal dies under such conditions is true; but, since the conduct of life contains something different from the absence of oxygen, the proposition stated at first is erroneous, and incoherent with the true propositions. We take the reality life and this same reality in air deprived of oxygen, and, since life disappears at the contact, the conditions of life are different from such atmosphere. Thus neither do we treat the error as if it were a real fact of life, which it cannot be, nor on the other hand do we treat it as a mere suggestion of our minds, something which has an existence somewhere in a non-mental world of neutral being. We experiment so as to test it in the only way we can. We take the realities with which it deals, life and the atmosphere described, and discover whether the one reality is compatible with the other. It is in this sense then that the coherent propositions which make up a given department of reality are incoherent with errors.

Incoherence and real opposition.

Hence the incoherence in every department of an erroneous proposition with true ones is not to be confused with the real opposition between propositions which are both true. Such conflicts are of the very essence of reality and contribute to its reality. Thus a body may be acted on by two equal and opposite pulls, and in consequence is at rest. There are two conflicting causes at work within the reality, but there is no incoherence. If the body were not at rest the two opposite forces would not be equal. There would only be incoherence if the two propositions asserted were, 'the body is actually moving to the east,' and 'is actually moving to the west.' Thus there is no error within a given reality itself. An error is concerned with a piece of reality which is outside and does not belong to the given reality, though, as we saw in the case of the colour of the rose, the reality it deals with (the white colour) belongs to a class of realities (colours) which has its representative (yellow colour) within the given reality.

Nor again does the incoherence of the error with the truth lie solely in the conflict of the true *believing* with the erroneous one. That conflict does exist. But it follows and is parallel to the contemplated incoherence. For in cognition we watch and do not make. Our believings are guided by the reality outside us, and we do not make the reality but find it. It is only the *truth* that we make when we compare ourselves with one another. Hence it is that in respect of all empirical matter the proposed test of truth which consists in the inconceivability of the opposite is useless. We cannot tell what is empirically inconceivable till we have tried. The test is only valid in respect of categorial material, for there we enjoy these determinations within ourselves as well as contemplate them outside us. We cannot believe a thing to be moving up and down at once, for in this case the believings also are incompatible. If A is greater than B and B than C, A is greater than C. We cannot conceive the negative, and our impotence is a test (though not the ground) of such truths. But such truths are limited in their range. In fact the real value of the proposed test lies, not in its practical usefulness, but rather in its calling attention to the difference between empirical qualitative determinations and the determinations of categorial features.

For simplicity's sake, I have assumed that the error is completely incoherent with the propositions that make up the reality. In the practical work of discovery this is not always or necessarily so. We have propositions which we discover to be partly true and partly false. A new proposition tested by previously discovered ones may show us that our old truths have to be modified in rejecting the new proposition. These details though vastly important for the method of science may be omitted.

The test of whether propositions believed are real at their face value is thus the coherence of certain propositions with one another and their incoherence with others. It is reality itself which determines this distinction. Beliefs get sorted out, and one set are real in themselves,

Truth and error related to mind.

the others belong to a different reality. But this distinction only comes into existence through the conflict and co-operation of many minds, and the reality, or real propositions, are true only in their relation to the minds which have reality for their possession and reject the judgments of the erroneous minds. Truth and error are in this sense creations of mind at the bidding of reality. Moreover, they imply relation not to the individual mind as individual but to the individual mind in its attitude to the social mind, that is to the individual as a standard mind. The mind which has truth has it so far as various minds collectively contribute their part to the whole system of true beliefs; the mind which has error is so far an outcast from the intellectual community. Thus while on its objective or contemplated side, error is detected by being convicted of introducing an element of reality which does not belong to the reality investigated, on its subjective or believing side it fails to cohere with the social believings. In this process of discrimination of believings there occur all manner of adjustments of one believing to another, always at the guidance and under the control of appeal to the contemplated fact, but in one way or another truth means the settling down of individual believings into a social whole and the condemnation of the heretical or unscientific believing; just as in practical matters by interchange of counsel men settle down into a common course of action which may be the initial proposal of some one, or a number, which wins assent, or may turn out in the end to be a proposal different from the original proposal of any one person; while some again dissent.

Truth and reality.

True knowledge therefore owes its truth to the collective mind but its reality to the proposition which is judged. The divergences of standard minds from the isolated minds of the victims of error are the mode by which we come to apprehend propositions as true, by their contrast with error. Thus in being aware of a real proposition as true, we add nothing to its reality. On the contrary the truth follows in the wake of the reality. There is no property of coherence in reality itself. Coherence is a property of the perspectives which we have

ourselves selected; it is we who take them piecemeal, and we who reunite them, and their reunion is performed through their exclusion of the incoherent error. Hence it was said above that the coherence of true propositions was generated in the relation of the reality to the mind. In entering into this relation the reality gives rise, in its combination with the standard mind, to truth, and may be said to become true. For it is the intrinsic structure of the reality which compels the distinction amongst ourselves between apprehending truly or falsely and between truth and falsity in our propositions. Hence for reality to be true it must be possessed by us. Whereas merely to be known, that is to be apprehended or cognised, even to be believed, reality does not need to be so held. To be known is to be compresent with a mind. The reality owes to mind its being known, but it would be what it is without being known. Not its *esse* is its *percipi*, but merely its *percipi* is its *percipi*. The same thing is true so far of its truth. Its reality, being independent of its being known, is independent of its being known truly. But its truth cannot be detached from its true or false knower, for it is the reality itself in virtue of the way in which it occupies its space-time which resists *and is known to resist* the attempts on the part of certain minds to attach to it certain features of other reality which do not belong to it. Therefore merely to be known is indeed to stand in relation of compresence to mind, but to be known truly or falsely is not only to be compresent with a mind but to be united with it in one whole situation, to be part of a reality compounded of what knows it and itself. As entering into this total, the object is true or false and the mind judges truly, or falsely. Were all minds perfect instruments of apprehension, mirrors of reality without inequalities of the surface (in Bacon's phrase), there would be no truth, for there would be no error. It is because minds differ and vary from normality that reality compels minds to distinguish among one another and thereby to create truth, in their objects and in themselves.

Why, it may be asked, should truth and error require



No truth  
or error  
for a mere  
individual.

the contrast of more minds than one? Does not the individual by himself distinguish truth and error? Does he not make mistakes and on testing them pronounce them to be errors? It is true that owing to our limitations, a single individual can hardly become fully acquainted with any reality, that he needs to be supplied with information from others who view the topic from different angles, which his own life is not long enough for him to occupy in turn, and that it is easier for him to recognise error when it is brought before him in other persons as well. Give him time enough to see the topic from all sides, and he would arrive at truth and discard error in his own person.

Now it is of course true that in practice the individual does this. But then the individual in practice never is a solitary individual. He may investigate alone. But each of us has been trained to be on his guard against error, and as Robinson Crusoe carried into his solitude the tradition of civilised life, so the individual working alone represents social intellectual tradition. He judges himself with the social eye, as in conduct we judge our own morality by our conscience, which is the vicegerent of society. We deceive ourselves if we confuse such an individual with a real solitary. Imagine such a real solitary, an individual who learns entirely for himself. He would make mistakes of sense or judgment, and, acting on them in practice, or pursuing his purely intellectual inquiry on the strength of such belief, would find that the facts were different, and would change his mind, supposing his mistake had not led to his own destruction. He would say I thought this thing was so but I find it is not so. My old belief does not work, and I abandon it. His mistakes would be misadventures. But he would not say I was in error. He would only say I entertained a belief which I am compelled by the facts to abandon, and in general he would abandon his old belief without thinking about it at all, just as when we find we are cold with one coat we put on a thicker one, not saying to ourselves I was foolish to put on the thin coat, but simply exchanging it for another. He would not be aware of an error, for he would only know that

the reality was not as he thought it to be; he would only notice that things were not so, not that it was his mind, his believing, which was at fault. For, to repeat a thrice-told tale, in the absence of other minds he would not notice his own. But when his fellow entertains the belief which the reality rejects, he can say it is your mind, your believing which is at fault; not only does your belief fail to work, but you are in error. When he has once realised what error is, as the product of a mind and reality, he can then, with this experience, consider his own belief as if he himself in entertaining it were another person, whom he happens to identify with himself, and say not only was my belief a failure which I changed, but it was an error. Thus to suppose that a really solitary individual can be aware of error in his own person is to commit that mistake of 'introjection' which is responsible for so many fallacies in philosophy. It is to read into ourselves what we discover in fact from observation of others. We treat ourselves as if without others we could discover in ourselves what we only discover from them.

Truth and error are therefore as much social products as moral good and evil; as indeed would follow from the principle that speculation is suspended practice. What is true of the one is true with appropriate changes of the other. Sociality is a feature which they have in common, being fundamental. Hence the mere individual is not, as such, the subject which judges truly or falsely; he is the subject of appreciations of truth and error, only so far as he represents the social mind; and here as in other cases value is something objective like language. Truth for the individual is a secondary conception. It is not curiosity alone which furnishes truth, but curiosity chastened by comparison with the curiosity of others.

Many minds are needed then for truth, not because the many facets of reality are visible only to a multiplicity of minds, but because in the intercourse of minds the truth is created as truth, at the guidance of reality, by mutual confirmation or exclusion of beliefs. Thus just as truth, as truth, is real in arising out of the relation of a reality to

Error as  
the oblique  
judgment  
of reality.

the mind that is blended with it, so also error is real only as possessed by the unstandardised believer. The erroneous proposition at its face value is not real; it is unreal, that is, it is false. It is not merely, like an illusory appearance, what reality reveals itself to be to the mind with a twist or squint. For it is believed. The illusory appearance so long as it remains merely such is not believed, but only received. Accordingly with changed conditions it may be replaced by a real appearance. Withdraw the grey paper from its red ground and it looks grey. The appearance would not be there but for the perversity of the observer's mind. But he does not identify himself with it. This is just what the victim of error does. For he judges; he brings the elements of his judgment into explicit relation with each other and holds the combination to be real. Hence his proposition is not merely his perverse perspective of the world, but it is his making. The reality of the error resides therefore in the new reality composed of himself and the external reality: and because of this can be rejected by the standard minds.

At the same time, as has been abundantly illustrated from the simple case of the misjudgment of the colour of the rose on a previous page, error is always in contact with reality and is partial truth. Moreover, it is in partial contact with the reality about which it is erroneous. It is always, as Mr. Stout<sup>1</sup> has explained, the adoption of an unsuitable real alternative amongst the alternatives open to the kind of thing to which the subject belongs. Mere unmeaning combinations of ideas are not errors. The error is founded on the topic in question and on the characters which are appropriate to its sphere but do not happen to fit this member of the sphere in question. Thus to say that virtue is red is not an error but meaningless; but to say that it is physically necessary and not free is, or may be, erroneous because virtue belongs to the class of actions, some of which are compulsory and others free. It is only erroneous to believe that a menace inspires terror in a given case, because menaces may inspire terror or anger or some other emotion or, to

<sup>1</sup> 'Error,' *loc. cit.*

take the alternatives still more widely, must have some effect upon the human mind to which they are addressed.

True propositions exist, it was said, in the sphere of reality to which they are referred. But the sphere to which they are referred does not exhaust the whole of that department of reality. Thus propositions about life belong to life as it reveals itself to minds, and that revelation is partial. It is only therefore within the sphere of reality as revealed (the only meaning which minds can attach to any department of reality, for example life) that the true propositions are real. As knowledge grows life may be revealed more fully, and propositions true for the older revelation may need to be readjusted for the fuller one. The once true proposition may turn out even to be erroneous for the newer knowledge, while it remains true and real as such within the narrower range of ancient revealed fact. Thus truth is at once eternal and progressive. 'Once true always true,' so long as the range of facts is restricted as before. But truth varies and grows obsolete or even turns to falsehood. Hence a theory may be true for one generation and false for the next. Yet it remains true for the range of facts open to the minds of the earlier generation. This is possible because truth is different from reality and implies possession by a standard mind. Reality determines what is true, but reality includes more than that part of it which affects any one generation. The atoms really are simple to the minds which used methods different from the present physical ones. They have not ceased to have the simplicity imputed to them then. But they are no longer simple for us. The reality which is known by true knowing is still only a human selection from the whole reality or even from the whole of any specific department of reality, like life or light. The truth, that old truth may be new error, does but help us better to see that truth like error is a product of mind and reality; that error is always partial truth, and truth in its turn may contain the seeds of error, but that truth does not distort the reality which it contemplates, and only

becomes error if the reality reveals itself to be larger and perhaps different than it was before revealed. The only propositions which are true and cannot change are those which embody categorial characters, as that every event has a cause. Even mathematical propositions since they are concerned with empirical determinations of space and time may be subject to error because of the defects to which our intuitions are subjected. Truth is thus the ever-increasing adaptation of minds to the reality which they know, which is the same thing as to say it is the progressive revelation of reality to the minds which know it. As lower types of life can sustain themselves in their surroundings along with the higher types which make use of them, so lower ranges of truth persist and remain true for their apprehended world while at the same time they give way to fuller and higher or more perfect truths which are built upon them.

No degrees  
of truth or  
reality;  
but of  
perfection.

There are therefore, I must fain believe, no degrees of truth and much less of reality. What is real is real, though any portion of reality is incomplete. What is true is true. But while there are no degrees in the truth of knowledge there are all manner of degrees in the perfection or range of knowledge. This variation occurs in two ways. In the first place later truth about the same kind of subject, for example light, may be fuller than earlier, and this may so alter the relative proportion of a given proposition that it becomes inapplicable to the wider range of reality and becomes untrue. The electromagnetic theory of light is not truer than the emission theory but more perfect, and renders the old incomplete and in some respects erroneous. Truth may also be in a different way not truer but more perfect, in correspondence with the perfection of the reality which is apprehended through it. Life is not more real than matter but a fuller kind of reality. Their reality is one and the same, the occupation of a space-time with a certain configuration. But one reality may be more comprehensive than another, as for instance number is more comprehensive than life or mind, to both of which number is applicable. Or again one kind of reality may from its complexity be more harmonious than another in

the sense that its parts are in more intimate connection.<sup>1</sup> These things make the reality and its correspondent truth more perfect but do not affect its intrinsic reality or truth. It is only that there is more *to* the reality or truth in one case than the other; a wider range or richer contents in one case than the other. The doctrine of degrees of truth or reality rests on the belief that finites lose their value or at least alter it by being taken along with others. If all finites are spatio-temporal complexes this belief cannot be well founded. One finite may be more complete or more highly organised than another, but the second occupies its space-time as much as the first, and is equally real; and the propositions about it equally true.

It is doubtless the constant change in the contents of truth as knowledge grows that has led to the doctrine that truth is nothing but efficiency, that the test of truth is that it works, not merely or only in the way of securing practical success, but in the way of securing theoretic or scientific consistency and organisation. That truth is a coherent whole of knowledge which works in organising our experience and achieving success, is, standing by itself, so self-evident as to be a commonplace. All science is the unification of propositions of experience, and a proposition is true if it works with other propositions. Were the doctrine of pragmatism nothing but an assertion of this fact it could hardly claim to be a novelty. Its significance is that it maintains that there is nothing more to be said of truth. It excludes and deprecates any inquiry into the reason why truth is true. So apprehensive is it of the doctrine that reality is a closed system, fixed and eternal, into which all finites are absorbed and lose their finite character in the supposed Absolute, that it dispenses with all inquiry into the ultimate nature of reality. Truth is indeed what works. But it works because truth is determined by the nature of reality. Reality is indeed no fixed thing, but being temporal is evolving fresh types

<sup>1</sup> These characters of comprehensiveness and harmony applied to perfection are of course taken from Mr. Bradley's great chapter on degrees of truth and reality (*Appearance and Reality*, ch. xxiv.).

of existence. But a truth which is not guided by reality is not truth at all. There is only one case in which it is completely satisfactory to declare that truth is what works. For the solitary individual described in a previous page it is a full account of reality that it is what works. There is for him no other test. But for him there is no such thing as truth at all just because he lacks that intercourse with others through which at the bidding of reality the distinction of the true and false is struck out. Pragmatism, however, is a perfectly adequate account of all that is open to him in the way of assigning value to one part of his experience over another.

Mental  
proposi-  
tions.

Hitherto we have been considering only propositions belonging to non-mental reality. But there are also mental propositions which are not the object of the mind but in a strict sense the contents of it. To every external object there corresponds an enjoyment, sensing, perceiving, remembering, imagining. Judging is no exception, and the enjoyment of judging is a mental proposition. It is a relation within our enjoyment of two distinguishable features in it, as, when I say 'Glasgow is a five hours' journey from Manchester.' I have in the object the relational union of all these complexes in external reality, and in myself the enjoyed union of the enjoyments in which I am aware of them. These enjoyments are united within my whole enjoyed self, and in the end every enjoyed proposition is believed as a part of my whole self, just as every contemplated proposition is contemplated as belonging in the end to reality in general, of which my mental reality in general is the counterpart. Such propositional enjoyments are observed by introspection; but they do not for that become objects of contemplation; any more than in observing my perceiving I turn the perceiving into an object. I need not after previous remarks about introspection labour this matter further. We may even have a mental judgment about another mental judgment and still the included enjoyment is not the object of the including one. For example 'in judging you to be a

liar, my mind was clouded by prejudice against you.' The first judgment is simply included as a part within the larger whole of enjoyment. Precisely so I may have an external judgment about another external one, as *e.g.* 'the reason why so many died in the town from cholera was that the water supply was infected': the one proposition is included in a larger proposition.

Not only are there mental propositions but there are mental truth and error. The only difference from truth and error as to external realities is that the propositions here are the contents of the believing, and there is in general<sup>1</sup> no necessary inclusion with the true or erroneous proposition of the contemplated proposition with which it is of course compresent. I may be in error about my own mind. A man has committed a trifling peccadillo and I say I was indignant with him because I disliked his action. In fact I bore the man malice and seized on the fault as shocking my sense of duty—a way we have of hiding our innermost motives to pass what Mr. Freud calls the censorship of our respectable selves. I am not lying but do really deceive myself into thinking what I say. But I am in error because I connect my indignation with the sense of right which is somewhere dormant in my conscience, but not with the really active feeling of malice which I really felt but owing to my mental squint did not see. The judging is not the reality which I really enjoy in connection with my action, but distorted by the intrusion of an alien element. I do not represent my mind as it really is, but what I judge has its foundations in the whole reality of my mind. The same account then holds of error as to mind and of error as to external things. Only, the erroneous judging is itself a real enjoyment of the mind, whereas in external propositions the erroneous proposition does not really exist at its face value. The reason of the difference is that here the erroneous judging (though it has its correspondent external proposition) is itself, is its own contents. It is not real in the same sense as it is erroneous. It is real as having actually occurred; it is erroneous as not

Mental  
error.

<sup>1</sup> See later, section C, p. 279, note 1.



being the real state of mind which it pretended to describe. Hence when I judge my mind subsequently after the error has been dispelled, I say this proposition occurred but was not the reality of my mind when I acted, or did not represent my mind truly. I regret the state of mind from which I really acted, I declare my description of it to have been false.

This may be regarded as an application of the general explanation of error to the case of mental propositions. On the other hand, we have seen that it is often easier to discover in the case of mind what is true both in mind and external realities, than from inspection of these realities themselves. Any one who recognises that in mental error an enjoyment is displaced from its proper connections and referred somewhere else in the mind, could pass from this to the case of error as to external reality and understand that it too is a displacement within reality, and that the reality of the error as such comes about from the union with reality of a distorted mind, and that the erroneous proposition is the way in which reality is revealed to a mind in this condition, but does not exist at its face value in reality by itself.

The  
science of  
mind.

But attention to error in the mind comes much later in our history than attention to external error and truth. The individual who finds truth and error in his enjoyments is already familiar with truth and error in contemplated propositions and is a socialised individual, who either agrees with or deviates from his fellows. Indeed truth and error of mind arise only when we are at least capable of communicating our minds to others and out of the desire so to communicate. When we judge our own minds truly or falsely we judge them as in the sight of others.

When propositions about individual minds are so systematised by communication from mind to mind, one mind supplementing another, leading another to discover in himself what otherwise he might have passed unnoticed, and stimulating the curiosity of the indi-

vidual as to himself, we have the science of individual mind which is psychology. It is no less a science than the sciences of external reality, but it is limited by the nature of its subject-matter. At first sight it might seem as if there could be no such science, seeing that no other individual can enjoy my enjoyments; whereas external propositions are the common object of many minds. But it is by co-operation or rivalry in practice that we become aware of each other's minds, and as our co-operations extend from mere practice to the satisfaction of those practical desires which are desires for knowing or theory apart from practice, we deepen and widen our acknowledgments of one another. Intelligible speech is the chief means of such enlargement, and while it is directed in the first instance to explaining to one another the nature of the external objects we contemplate, it comes to be used to make clear to others the nature of our enjoyments. At first we make bare our minds for practical purposes, relying on others to relieve us when we shiver or moan or say we feel cold or ill. Later our purposes become purely speculative. We satisfy our own curiosity and the curiosity of others. Thus arises the science of individual mind. Not only can we then compare one process in ourselves with another, and arrive at generalisations, like laws of association or the effect of imagination on our feelings, but we compare ourselves with others as declared in their statements as to their minds; we are able to verify that their minds work as ours do in some respects, differently in other respects. Psychology goes so far towards being a science as is allowed by its limitation to enjoyments whether in me or in another.<sup>1</sup> A superior being looking on at our minds as we look on at living beings would possess our psychology as one of his external 'sciences,' if the name science may be extended to his apprehension. It is therefore a mere

<sup>1</sup> The method of study is of course not limited to introspection. A mental process does not exist without its object, nor without external action. Both of these supply information (and the larger part of it) as to the mental process.

prejudice to suppose that sciences must all be of the external world.

Logic.

Logic is sometimes regarded as a mental science, but is only so, qualifiedly. It is concerned with the distinction of truth and error, and is only so far concerned with mind as truth and error are. But truth follows the reality which is known and is determined by it, though it is true on account of the mind which knows it. Logic may be called the formal science of truth. The special sciences, whether of external realities or of individual minds, consist of systematised and coherent propositions, whose coherence is determined by the particular empirical character of their subject. Now propositions have a formal as well as a material character. Thus the fall of a stone and the attraction of the planets to the sun are materially coherent; they obey one material law. But these truths are not merely truths about stones and planets but are propositions. Logic investigates the formal coherence of propositions in their character of propositions. These formal characters are the categorial relations which are expressed in propositions of various sorts, the relation of substance and accident, of universal and particular, of cause and effect, of order in time or space, of magnitude, and the like. The relation of subject and predicate in a proposition is not to be confused with these formal relations. Though itself logical, it rests on a psychological distinction; the subject being the immediate matter of interest and the predicate describing how it is qualified. It is always possible to institute this distinction. But it is not the real relation which propositions as such contain, in their character of reality or claimants to reality. Most of the propositions used in the so-called formal Logic belong to the substance-attribute or to the universal-particular relation, but they are only a selection, a very important and comprehensive one, from the list of forms, and it is mere distortion to force them all into the shape of a substance-attribute relation. Now logic describes these forms of proposition which are the stuff of the sciences, and it shows in what way these propositional

forms are combined with each other so as to secure coherence and avoid error. This aiming at truth and avoidance of error make it a normative science. The methods of science are the rules to which we must conform in attaining truth, but they are discovered by the mind from the nature of reality. A method of proof means a certain relation among propositions themselves, as propositions with certain formal characters, in virtue of which, given certain propositions, other propositions may coherently be stated; that is, it supplies rules for inference. This is quite in keeping with the traditional logic of the syllogism which is concerned with propositions about substance and attribute and universal, particular, and individual. Given certain propositions involving those real relations, it tells you what other propositions belong to the same subject-matter in virtue of them or consistently with them. The logic of scientific method is an extension of the same principle to include all legitimate inferences from propositions of all varieties of formal character.

It is clear that such a science is neither a science of things nor of mind but of things as possessed by mind. It is a subject-object science. Our propositions are perspectives of the world and unpiece it, and may do so wrongly. In constructing truth at the guidance of things we are piecing together by an act of will or judgment what we have unpieced by acts of will or judgment. Experiment is our control as to the material or empirical details. Logic controls us in the formal nature of this process, for it is concerned not directly with the empirical features of reality but with its categorial ones.

The different chapters of this subject-object theory throw into relief one or other of the elements which are blended in it. The mental element exhibits itself more and more as we pass up the scale of the forms of judgment to inference; in the negative judgment, in imputing to the subject a predicate which the subject rejects; in the disjunctive judgment, in the expression of a real alternative under the form of hesitation; in modal judgments the mental and objective elements almost balance each

other ; finally, inference betrays most plainly that truth is not merely reality but its unity with mind, for inference weaves propositions into a system, and system or coherence belongs not to reality as such but only in its relation to mind. Hence it is that, as noted in an earlier passage,<sup>1</sup> logical grounds are more comprehensive than real causes, for anything which may bring disconnected propositions into coherence may furnish truth, though it may be but our method of approaching the reality within which truth is constructed as a new reality.

<sup>1</sup> Bk. II. ch. vi. B, vol. i. p. 297.

### C. GOODNESS AND EVIL

Goodness and badness in things and good and evil in the objects which satisfy them have a wider range than moral goodness and badness, or what is morally good or evil. Value does not begin at the human level, but exists in its appropriate form at an earlier level. I shall speak first of moral goodness and moral evil and return to the wider goodness and evil. Moral goodness is distinctively human, belongs to conduct as it issues from will and is social.

*Difference  
of goodness  
and truth.*

Morality differs from science or knowledge in the proper sense in that morality is practical and science speculative. From this fundamental difference all the other aspects of their difference follow.<sup>1</sup> Science is reality as possessed by a mind which thinks truly ; and such a mind is one which judges coherently with the judgments of other minds, and therefore, in so far as it reflects or represents those minds, coherently with its own judgments. But the coherence among the acts of judging follows and is determined by the character of the reality judged, which includes what it contains and compels us to reject what it does not contain.

In morality the conditions are reversed. There too we have a composite situation, which on the one side contains the acts of will whereby we make or bring into existence certain external relations among real things corresponding to the idea first entertained in our mind, and on the other the objects aimed at in the willing. Now while truth in our believings followed in the wake of the

<sup>1</sup> In the articles on 'Collective willing and truth' I began with goodness and evil, and discussed truth and error in the light of them. Practice is more general than learning, which is suspended practice, and the nature of goodness and evil is easier to understand. In psychology this procedure is dictated by the principle of looking to the conation before we discuss its corresponding cognition. But here I have foregone this advantage, and have taken cognitive value first.

reality, the moral good of the reality produced by the will follows the coherence of the willings. The reality which we produce is good in so far as it satisfies coherently the persons who bring it about. Goodness is of course subject to the conditions imposed by the nature of the non-human circumstances of action; it is right, for example, (being prudent), to change one's clothes when they are drenched with rain. Human satisfactions must take account of the laws of external and of human nature. But the facts we seek to bring about are, so far as their good is concerned, determined by how far they satisfy persons and are approved by them. All action is response to the environment, but one part and the more important part of our environment in moral, that is in social, action is our fellow-men. For not only do we take account of their approbations as we do in the prosecution of knowledge, but they are themselves the objects of our appetites, as food and drink are. Now it is in taking account of their wants, as in taking account of their opinions in learning, that we settle down into the system of moral principles. Accordingly it is indifferent to say that morality is the adaptation of human action to the environment under social conditions, or that it is the system of actions approved by man under the conditions set by the environment.

Nature of  
morality.

Morality arises out of our human affections and desires which we seek to satisfy. Some of them are self-regarding, others are natural affections for others. In willing the realisation of these desires we come into partnership with others, partly by way of co-operation, and partly by way of rivalry. We sympathise or dissympathise, according to Adam Smith's doctrine, with certain impulses or tendencies of others. Morality represents the solution of the problem set by this state of affairs. The good wills are those which cohere with each other; the bad ones are those which fail to fit into the system thus arrived at, and are excluded. Those practical acts which are thus coherent are approved, the others are disapproved. The clash of wills is a consequence of their practical character,

for though a speculative judgment does not conflict with another, except in so far as the reality forces the rejection of the false judgment, practical acts of mind have hands and feet and oppose or reinforce each other of themselves. Before entry into the system, the individual members of the social whole have wants and prefer claims; these claims so far as approved, that is in the degree to which their satisfaction can be admitted consistently with the claims of the other members, if they can be admitted at all, become rights, and the performance of them an obligation. The good act, approved as pleasing the collective wills and not merely the individual's own will, may vary according to the nature of the individual and the place he holds in the society. Still, so far as it is allowed, it is approved for any one in those circumstances and of that nature or temperament, and the approbation of the commonalty belongs to it not as a favour to this individual but to any such person under such conditions. Any good act is thus universal in the sense that it would be required from any individual, and however much allowance is made for the peculiar circumstances of the individual, the act approved and required is impersonal, in the sense in which truth is impersonal, or in the sense in which speech spoken intelligibly, however it varies with the voice and style of the speaker, is, so far as it is intelligible to others within the spirit or genius of the language, impersonal.

This is the true universality of moral requirements, that they would be binding on any individual under such conditions. But also since human nature is in so many respects alike and the circumstances of action are perpetually recurring in the same form (we are perpetually being asked questions to which a truthful answer may be returned and called on to consider other persons' property), there are many moral rules which have a high degree of generality and are, within limits, universal in this sense too. Elementary rules of conduct like most of those of the decalogue are universal in this sense, that, being the kind of action called for by simple and elementary situations, on the response to which the very existence of society



depends, they are approved everywhere, and in all persons. But all of them admit exceptions in special cases, provided the exception is not made by the individual in his own favour but impersonally. It was because Kant thought exceptions could not be made impersonally that he disallowed them altogether under any circumstances, giving thus to the moral law an *a priori* instead of an empirical character.

Goodness  
and the  
good.

By the phrase 'coherence amongst wills' we are but expressing in a more scholastic and technical manner the social character of morality. But the wills in question which are approved as good or bad are wills for certain objects, and are taken along with those objects. The object of willing is some fact in the external world which I first entertain in idea and then realise in practice. Every such object takes the form of a proposition; this food or drink is eaten or drunk; this life is saved; this property is distributed to certain individuals. When the will is purely internal, as in the suppression of an illegitimate thought or the stimulation of a legitimate one, instead of an external object willed we have an internal enjoyment which forms the contents of the will.<sup>1</sup> The will therefore is always a will for something, and that something is most often an external fact, and is then the object of the will; or it is some enjoyed fact, and it is then not the object but the contents of the will.

For simplicity let me confine myself to external propositions, leaving the reader to make the necessary qualifications for facts of enjoyment or mental facts. The object of willing is then the existence of some fact in the external world. The sum of such propositions constitutes the conditions by which moral institutions such as property or family or liberty are maintained. The consummation of such acts of will is the satisfactions of human persons secured by these conditions. Thus I cannot will another person's happiness or misery; but I can will the conditions

<sup>1</sup> There is of course also the compresent external object, e.g. stealing, driven from the perspective by some antagonistic thought (cp. above, ch. vi. p. 154).

which when realised secure his happiness or misery. The willed objects are the facts to which the satisfactions of persons are the response. Such satisfactions are what are called moral goods; and correspondingly moral dissatisfactions or the satisfactions of immoral wills are moral evils. The objects secured by willing are not in themselves good or bad but only in so far as they supply such satisfactions. For example, riches are not in themselves morally good or bad, but only in so far as they satisfy the needs of persons and satisfy them in a way sanctioned by the collective approval. An unjust distribution of property, such as is effected by robbery, does indeed bring satisfaction, but to the wrong persons.

The good is thus a system of satisfactions of persons which is effected by right willing. Mere satisfactions, such as possession of wealth, or pleasure, or, in general, happiness, or having good looks, or an even temper, are not of themselves good in the moral sense, though they are good in the general sense of bringing pleasure. What makes them morally good is that these satisfactions of persons should be organised and made coherent within the individual, and in the relation of individuals to one another within the social group, and thus "maximised"<sup>1</sup> or made as great as possible consistently with the conditions of social life. We may think of this Good apart from the wills which sustain it, but it does not exist without them. Just as truth resides in the union of reality with the minds which possess truth, so goodness resides not in the bare satisfactions of appetites alone nor in the will alone, but in the union of satisfying objects with the wills which sustain them. In a word, goodness belongs to moral institutions themselves which are made by collective men out of the needs and passions, selfish or altruistic, of individuals. The characters are good which act in the spirit of these institutions, and the various types of their goodness are the virtues of character. The non-mental facts which are the purely external aspect of the institutions are not good in themselves but only as

<sup>1</sup> The word is due to G. Simmel, *Einleitung in die Moraltwissenschaft* (Berlin, 1892-3), who speaks of the "maximation" of happiness.

securing in a certain fashion, that is coherently, the satisfactions of the passions of the persons engaged.

Union of  
mind and  
objects in  
goodness.

Thus in both goodness and truth there is the union of mind and its objects, the non-mental reality. But in the case of truth it is the character of this non-mental reality which compels the divergence between the truly and the falsely judging persons. In the case of good there is no antecedent coherence or structure in the non-mental reality, for the good non-mental reality is brought about by persons themselves through their wills, always in obedience to the conditions imposed by the nature of things. The wills satisfy the passions by aiming at objects which when attained constitute in relation to the persons their satisfaction. By persons is meant unions of mind and body, and persons satisfied according to moral laws constitute the system of moral institutions. It follows from this statement that good institutions are a creation of men by which they live well in their non-mental environment, and are adapted to it. Any successful organic type is a kind of organism which can sustain its life under outward conditions, and moral persons are a type of beings which maintain their existence under their conditions, and do so by becoming socialised, that is by adopting conduct which they mutually approve.

Morality means then a type of existence in which passions of all sorts are regulated socially, and can be so regulated because they are satisfied in willing the objects which satisfy those passions. Men's nature drives them into society, or rather men do not exist outside society, and social institutions are the product of open-eyed intercourse between individuals. Founded on animal passions, they regulate the satisfaction of them, and regulate them by interchange of judgments about the results aimed at. For all willing involves anticipation of its object or end in idea. It is equally essential to observe that the wills which are thus interacting with each other in the creation of moral institutions are wills for these institutions, that is, they are not taken apart from the objects on which they are directed. Sometimes it has

been supposed that goodness belongs to the will in itself as a mere mental function. But this is erroneous. Willing may be considered as it is by the psychologist as a mere mental process compresent indeed with the object willed, but a distinct existence. But the will which is good, which is engaged practically in making and sustaining goodness, and is the subject-matter of the science of ethics, is the will in its interrelation with other wills. Now intercourse of mind with mind comes to the consciousness of these minds, as we have so often seen, only in so far as these minds are concerned with non-mental objects which are contemplated by the minds in common.<sup>1</sup> Minds can judge each other as good or bad only as directed upon these objects. I can judge you to be doing right or wrong only so far as I see you willing an object which I approve or condemn. It is not your will I approve merely as a mental process; what I approve is your will for temperate drinking or preservation of property. There is no such thing as inner morality, if it is thought of as independent of what is willed. Nor do I believe that Kant's conception of morality, which is I suppose the subject of those who censure inner morality, is really open to the censure. The fault of Kant was not that he imagined a will which could be irrespective of its object, but that he sought a criterion of goodness in formal features of will, which do not in truth exist. He was so anxious to free morality from regard for the consequences of action that he failed to notice that willing is

<sup>1</sup> This might seem to be inconsistent with the description of mental error in Section B, p. 267, but is not really so. There we were dealing with error as to the mind itself; here with a wrong which consists in an external act or result. There the mind was occupied with its own contents; here with its non-mental object. We should have the same state of affairs here, if we were concerned with the badness of wrong thinking, e.g. thinking something unwholesome. It still remains true, however, as pointed out on p. 260 of Section B, that as error implies sociality, I can only be aware of it in myself as representing a community, and ultimately this implies reference to the non-mental object of my state of mind. In fact we can only convict our minds of mental perversity so far as we have acquired the habit of communicating with one another about our minds as such, and this is done in the first instance through reference not to the mental state itself but its objects.

after all only an empirical existent and subject to empirical limitations.

Goodness then like truth is an amalgam of mental and non-mental existence ; is a new reality whose internal coherence is its goodness. Goodness and badness come thus into existence together. Goodness is the kind of conduct, or the kind of satisfaction secured by conduct, which can cohere with the claims of other persons. In so far as the individual is good he represents the collective wills of the society. His approbations whether of himself or others coincide with theirs. He is himself a microcosm which in his place mirrors the larger society, and is trusted to judge himself by his conscience, just as the solitary scientific worker judges truth with the eyes of the collective judgment. According to his special gifts of passion or temperament or endowment he has his allotted conduct which squares with the rest of social conduct. His part in maintaining social institutions is at once peculiar to himself and sanctioned by the general. So far as he is good he embodies the common judgment ; he is the wise man of Aristotle, or the impartial spectator of Adam Smith, who judges that to be good which is attuned to the needs of all ; or he is the standardised man.

Moral evil.

Moral evil, whether in the character, or in the result of conduct, corresponds to error in speculation. It is excluded from the system of good. Error we saw was a reality, but it was not true. Badness is more plainly a reality, just as much as goodness ; but it is not good, and it is incoherent with what is good. And just as error is reality seen awry, so badness or moral evil is the same reality with which morality is concerned, handled amiss. The problem of morality is to secure a coherent distribution of satisfactions among persons. Evil is misdistribution, and vice is a feature of character which wills such misdistribution. Drinking wine is not in itself evil. What is evil is the intemperance. The passion is gratified to the full. This may be legitimate in the case of certain affections, but it is not legitimate in this case when the full extent of the passion is for more wine than is consistent

with the man's own health and work or his intercourse with others. A private person who demands my purse is a thief and bad, but the Chancellor of the Exchequer may demand it legitimately if he has the sanction of Parliament. The surgeon does me no injury by inflicting pain on me to relieve me ; but the murderer does wrong because he uses the knife at the wrong time and place and without sanction from the General Medical Council. The Greeks were right when they sometimes identified justice with virtue as a whole. For the essence of justice is in distribution ; and all badness is injustice either to oneself or others or both. A man who drinks too much works too little ; the burglar has courage and enterprise, qualities which are useful material for good conduct, but he misplaces them. He might with proper training make a good explorer or soldier, but as it is he is a bad citizen. The materials of virtue and vice are identical ; they are the human affections and passions and the external things in the midst of which men live. Vice is a use of these materials which is incompatible with the claims of others, and the distribution of goods it creates is a social misfit. But it is the same human nature which is handled successfully in the one case and unsuccessfully in the other. Hence it is that, in the first place, it is possible within limits for the vicious person to become good by correcting his standard ; and, in the second place, some vice is merely antiquated virtue, legitimate once, like marriage by capture, but not suitable to changed circumstances.

But this does not state the full intimacy of vice and virtue. Vice is not merely misdistribution ; it is the application to one set of circumstances of a mode of action which has some inherent connection with those circumstances but is not as it happens suitable. Error we saw was connecting something with one of a set of alternatives which are congenial to a thing of that class, when the alternative chosen is not appropriate to this particular thing. Not only does evil deal with the same elements as good, but the bad act would under other circumstances be right. To revert to the case of the thief who takes my money. My property is subject to the assent of

society, and society does not grant me absolutely undisturbed possession. One alternative treatment of money is demanding it for purposes of the common good. The thief allies this method to private property, that is to property of which the society leaves me the undisturbed possession. Badness is not the mere casual combination of elements but the mixing up of elements belonging to classes which have a moral connection with each other. Evil is not therefore wholly evil; it is misplaced good.

Progress in  
morals.

The realities which the collective wills of persons make into morality or moral institutions are human nature under the external conditions of its existence. There is hence progress in morals, more perfect institutions growing up as fresh opportunities arise for adjustment of man first of all to his natural surroundings and next to his fellow-men. I have no space here to refer to the changes in institutions by which larger and larger bodies of men are taken in within the moral society; the topic has been admirably expounded by T. H. Green.<sup>1</sup> Nor for the changes introduced by discoveries like the railway or the telegraph, which are but a few among many causes which facilitate and refine intercourse. Human nature need not be supposed to change, but the enlargement of social relations and the complexity of living mean a constant revision of moral standards and a change in the system of conduct. But while there are thus degrees in perfection of moral life just as there are degrees in perfection of animal types, there are no degrees of goodness. To be good is to be good, and though the goodness of one age may be inferior to that of another age, and some part of goodness may lapse into evil, what is good once, like what is truth, remains good or true for the circumstances under which it was good or true. Values acquire a fuller reality but no greater reality.

Morality  
not self-  
contra-  
dictory.

Nor does morality any more than any other spatio-temporal existent labour under the contradictions which have been found in it, the opposite or divergent features

<sup>1</sup> *Prolegomena to Ethics*, Bk. III. ch. iii. B.

of self-cultivation and self-sacrifice. Self and others are claims which are antecedent to morality and are reconciled by the moral judgment itself. For morality approves both sets of claims in their measure. It may even be a failure of duty for an artist to devote himself to philanthropy, but it is moral judgment itself which sanctions this preference. For it counts the gifts of a man as material which he can contribute to the common good, and decides how far he is to use those gifts, and in what proportion to the other claims which it also sanctions. The reconciliation of conflicting claims may be inadequate, but it is only claims which conflict and not duties. Much suffering and heart-burning may be endured in the social adjustment of claims and exaltation of what is approved of them into rights, till the individual has learnt the difficult lesson of finding more pleasure in following the right than he loses from the sacrifice of his desires. There are even claims which must be called natural, though there can be no natural rights. Such are the elementary claims for freedom and life, which no society can refuse to turn into rights without compassing its own destruction. They are distinguishable from claims which are themselves of social origin, such as the claims of certain classes to the franchise. The natural claims are inherent in the individual. But the pains incident to the reconciliation do not make the solution contradictory. Nor can goodness be contradictory because it opposes the individual to the collective. For the collective is not itself an individual but the individuals themselves working in system; and to make the society a unit is comparable with the mistake of supposing a complex to be dominated by a monad of a new order.

Following the authority of Aristotle and Kant, I have treated moral goodness as residing, on the side of the subject, in habits of will and have found the Good in the regulated system of satisfactions which make up moral institutions like family, or property, or business, which are sustained by acts of will. But moral good and evil are but one kind of good and evil. For man is not

Good and  
evil in  
general.



merely a judging person but an animal, and there are animals which display sociality of an instinctive kind as distinguished from the open-eyed sociality of moral life. As the relation of enjoyment and object contemplated begins before knowing, so practical 'values' begin before morality. In general a being has goodness which is an efficient example of its type, and any quality is good which tends to the efficiency of the being's life. Even inanimate things are good which are able to do well the work for which they are made, as a good knife, to quote an illustration of Plato's and H. Spencer's, is one which cuts well. Correspondingly, anything is good which satisfies the appetites, and evil which frustrates them. The kindly powers of nature are good and its convulsions evil. Whatever brings pleasure when it is used is so far good and whatever carries pain is so far evil; and in general, owing to the adaptation of life to its natural conditions secured by natural selection, there is a correspondence between pleasure in the results of action and efficiency in the action itself. In this wider sense of goodness, gifts of disposition, like physical courage or calmness of temper which make it easier for man to be efficient, are admired and win 'approval' in ourselves, and are regarded with sympathetic approval in the case of lower creatures. But we hesitate to call them virtues, because while they promote the efficiency of the animal, it is the use which we make of them in relation to our fellows that makes them virtues. We distinguish physical pluck from bravery, and kindness of heart from benevolence. Still less can we regard a gift of intellect like a taste for philosophy as a virtue, but only the single-minded pursuit of it. Once more we may learn from the Greek description of virtue as merely one department of excellence. Various excellences of mind or of body (like beauty) or of external fortune (like riches) adorn the life of virtue but are not themselves good except in this wider sense. They form one ingredient in the perfection of moral life; the other being the degree to which virtue is attained even in their absence. Hence our ideals of perfect life sway between the two extremes, of fortunate

circumstances well used, and the strength of mind which triumphs over unfortunate ones.

Efficiency of life, whether in the animals or ourselves, we contemplate from without, and it affords us a sympathetic pleasure which is to be distinguished from moral approval. But the distinction is not always easy to maintain, particularly with the domestic animals, because we admit them as resident foreigners into some of the privileges of citizenship by crediting them with a life higher than they possess, and the same sympathy makes us confuse our admiration of their good qualities with moral approval of them. Thus we praise the tyke and despise the cur. Yet our praise is rather the pleasure we take in beholding useful qualities, and resembles not so much moral approval as the kind of sympathetic pleasure we feel in seeing one of ourselves eat heartily, or betray by patting a dog we do not fear during his meal.

The lesson of this ambiguity in the use of terms Moral values. expressing praise and blame is that the moral character in its contrast with the immoral one is a particular instance of the contrast established within the organic world between the successful type and the individuals which conform to it, and that which fails in competition with it and in nature tends to destruction. The terms of moral disapproval indicate the process by which the unsocial type is discarded in human life. The elimination which in nature is accomplished by death is here accomplished not by death, except in extreme cases where the deviation from the type is too great for mercy, but by the sentence of exclusion, which leaves room for the individual censured to return to the type on condition of altering his character if he can. Since none of us is completely virtuous,<sup>1</sup> each of us is perpetually experiencing the struggle within himself of the good type and the bad, and so far as he represents in his own person the tribal

<sup>1</sup> The perfectly good man is of course an ideal, and exists not as an individual existent but as a concept. No man is wholly good. I suppose that, roughly speaking, three-quarters of us may be good for, roughly speaking, three-quarters of the time.

conscience, is left to reform himself. Moral good is a type of life which is engaged in the same struggle with the evil type as appears in a cruder form in the organic world in general. But it changes its character because the struggle is carried on within the region of the judging and willing mind. One complex of institutions displaces another by virtue of its ability to maintain the human life under the conditions of its existence.<sup>1</sup>

<sup>1</sup> This paragraph is left in this place for completeness, but it anticipates the fuller discussion of Section F. For the general conception of morality used in this section compare *Moral Order and Progress* (London, 1889).

#### D. BEAUTY AND UGLINESS

I mean by the contrast of beauty and ugliness that of the aesthetic and the unaesthetic, or of the aesthetically pleasing and unpleasing. There is a special sense of ugliness in which the ugly is one kind of the beautiful, such as a grotesque in architecture or a very ugly but highly aesthetic drawing of an old man's head amongst Leonardo's drawings in the Louvre, or, when the ugly object has less self-dependence than these two examples, where an ugly figure is resolved like a musical discord into the whole structure of the work of art, like the figures of devils in Signorelli's or Michael Angelo's Last Judgment. Where such ugliness is more or less self-dependent we even commonly speak of it as beautiful. It is an example of what Mr. Bosanquet so aptly describes as "difficult beauty."<sup>1</sup> Beauty has also two meanings, that of obvious beauty, like that of the Hermes of Praxiteles, or that of what pleases aesthetically. I am dealing here with beauty in general and ugliness in general, and my concern is with the question what kind of reality the aesthetic object possesses or what place it occupies in the scheme of things. Partly for reasons of proportion, but mainly because of my own imperfect acquaintance with the vast and difficult literature of the subject, I am compelled to be brief and even dogmatic, doing the best I can with the problem as it presents itself to me in its connection with truth and goodness.

Perhaps the simplest way to understand beauty is to contrast the beautiful object on the one hand with a percept and on the other with an illusion. As contrasted with the percept, the beautiful is illusory, but it differs

Meaning of beauty.

Beauty partly real, partly illusory.

<sup>1</sup> *Three Lectures on Aesthetics* (London, 1915), Lect. iii.

from illusion in that it is not erroneous. Considered from the point of view of cognition, the beautiful object is illusory for it does not as an external reality contain the characters it possesses for the aesthetic sense. I perceive the tree in front of me to have a reverse side though I see only the front; but the tree really has a reverse side, and if I change my position the back of it is now seen and the front is supplied in idea. The marble is seen cold, to revert to the trite example, but the cold which is only present in idea really belongs to the marble, and I may in turn feel it cold and with eyes shut represent its whiteness in idea. The painted tree on the other hand looks solid but is not, and no change of my position helps me to see its other side. The Hermes is a marble block of a certain form and is perceived in its real qualities of solidity and hardness, but the block does not possess the repose and playfulness and dignity that I read into it aesthetically. The words of a poem are not merely descriptive of their object, but suffused with suggestions of feeling and significance which a mere scientific description would not possess. The more perfect the artistry the more definitely does the work of art present in suggestion features which as a cognised object it has not. Mr. Berenson compares the two Madonnas that stand side by side in the Academy at Florence—the one by Cimabue, the other by Giotto.<sup>1</sup> The Cimabue Madonna is flat and looks flat, though otherwise beautiful. The Giotto is flat but looks three-dimensional, and so far is the more perfectly beautiful.

Natural  
beauty.

What is true of works of art is true of natural objects, with the necessary qualifications. In general the natural object is, when its beauty is appreciated, perceived incorrectly, or if it actually has the characters which we add to it, that is for aesthetic appreciation an accident, and is the source of a different and additional pleasure. Like the artist in painting a landscape, we select from or add to nature in feeling its beauty. Literal

<sup>1</sup> *Florentine Painters of the Renaissance* (New York and London, ed. 3), p. 13.

fidelity is, or at least may be, fatal to beauty, for it is the means of securing not beauty but truth and satisfies our scientific rather than our aesthetic sense. If this is true for the mere onlooker, it is still more so for the painter or poet who renders the work of nature in an alien material which has its own prescriptions. Or we read our moods into the scene; or endow animate or even inanimate objects with our feelings; see daffodils for instance outdoing in glee the waves which dance beside them, or fancy a straight slender stem as springing from the ground, or liken with it as Odysseus did the youthful grace of a girl.

The cases of natural beauty which most obstinately resist this interpretation are the graceful movements of animals or the beauty of human faces, a large part of which arises from their expressiveness of life and character. You may see a face as majestic as that of the Zeus of Otricoli and the man may perchance possess that character; or the horse's arching of his neck may really proceed from the self-display we read into it in finding it beautiful. But in the first place we read the feeling or the character into these forms before we learn that the creatures in question possess them; and in the next place though a natural form may thus in reality happen to possess the supplement which we add from our minds, and may so far be unlike the work of art, yet the intellectual recognition that it does conform to the aesthetic appreciation is not itself aesthetic. This is best shown by the truth that the artistic representation may be more beautiful than the original, like the suggested movements of the winged Victory or of the figures in Botticelli's Spring. But also the knowledge that the natural object possesses the imputed characters,—which is aesthetically indifferent,—may even mar the aesthetical effect, for when we learn that a man is really as fine a character as he looks, our appreciation is apt to turn to moral instead of aesthetic admiration. In place of aesthetic contemplation we may have sympathy or practical respect. We may then safely follow the guidance of the beauty of art and declare that in natural

objects beauty, so far as it is appreciated aesthetically, involves illusion.

Contrast  
with  
illusion.

But aesthetic semblance is not error, not illusion in the accepted sense, which is cognitive. To express the matter by way of paradox, the aesthetic semblance is vital to aesthetic truth, or it is an ingredient in a new reality which is aesthetic. Cognitive illusion is in fact the transitional stage between reality without value and reality with aesthetic value. Illusory appearance, we saw, is the appearance of reality in some of its parts to a mind which for one reason or another is perverse or twisted. It only becomes unreal in the sorting out, in so far as it is believed. As believed in, it is unreal, but it then becomes an element in a new reality which is error. The illusory *thing* in its illusory form, though founded in reality, has as such, in its illusory form, no reality at all, but only as possessed by the mind. But whereas the error is erroneous because it is excluded by the real thing about which it is concerned, the aesthetic semblance is not attributed to any real object outside the aesthetic experience itself. Watch for a short time a revolving drum, on the paper of which are drawn vertical lines. When the drum is stopped the paper seems to move in the opposite direction. That is an illusory appearance, and is illusion if it is taken to be reality. Contrast this with the aesthetic illusion of the figures in the picture of the Spring. It would be cognitive illusion if we thought the figures to be really moving. But they are really in motion in the aesthetic reality in which the pictured form and the aesthetically imputed motion are indissolubly one. Thus it is because a cognitive illusion is pinned down by the reality which it cognises, and cognises falsely, that it is unreal. In so far as it is a reality, it has become an artificial product of the reality it cognises and of mind, and was therefore described before as a work of art. When we pass into artistic imagination, whether its object is externalised in stone or words or remains a vision of things, we have a work of art in the proper sense. Illusion is half art,

half truth. It fails of being either truth or art for the same reason; it is personal, while both truth and art are impersonal.

Thus in the beautiful object, whether of art or nature, one part is contributed by the mind, and it is relatively a matter of indifference whether the mind in question is that of the person who creates the work of art or that of the mere spectator, who follows in the artist's traces. In the case of natural beauty, the spectator and the creator are one. The element contributed by the mind may vary from the mere addition of external properties, as in seeing the flat picture solid, *e.g.* in the bare aesthetic effect of the drawing of a cube or a truncated pyramid, up to distinctively human characters of feeling or character, as in animating a statue with pride, or words or sounds with emotion as in a lyric or in music. Animation with life is intermediate between these extremes, for life though less than mental, and still for us something external which we contemplate, is yet on a higher level of external existence than solidity of form. It is only through what is thus added that the beautiful object has meaning or character or expressiveness.

Beauty due  
in part to  
mind.

I add that the expressiveness need not be something characteristic of man. The expressiveness of the work of art is to be itself, to be what it represents, to have the significance appropriate to it; for the painted animal or tree to seem alive and to grow or move according to its kind; for the drawn cube to look solid; for the pillar to seem (and to be) perfectly adjusted to support the weight it bears, and to bear it with ease. An ugly portico with stunted Doric columns gives the impression that the weight which the columns bear is crushing them; the tall columns of the Parthenon suggest that the roof is a light burden; the suggestion in neither case being true in fact. We may naturally enough render these impressions by investing the columns with life—springing up from the ground, and the like—but they belong really to the mechanical order. Thus the imputation of life and character enter into the express-



iveness of the beautiful object, only when that object means life or character. They are but one species of expressiveness. Further in every case, no matter how much of mind or character is read into the thing by the mind for which it is beautiful, the expressiveness remains that of the thing and not that of the creating or appreciating mind itself.<sup>1</sup> In choice and treatment of his subject the artist impresses himself indeed upon his work, which so far expresses or reveals him. But to feel Shakespeare in *Hamlet* is not to appreciate *Hamlet* aesthetically but to judge it critically. In the expressiveness which he adds to his material from his very personality the artist depersonalises the work of art. Even in a beautiful lyric the passion ceases to be merely that of the artist. It is the paradox of beauty that its expressiveness belongs to the beautiful thing itself and yet would not be there except for the mind. Under the conditions of the material in which it is expressed, the beautiful owes some part of its meaning to the mind, and so far it owes to the mind not only its *percipi* as every perceived object does, but its *esse*. We have therefore all the greater need of caution in extending what is true of

<sup>1</sup> I am aware that in the above paragraph I am raising (and evading) several difficult questions. How far may human meaning be read into the aesthetic object consistently with beauty? Beyond a certain point the practice of personification may become sentimental. There is, in addition, the question of legitimacy of different effects in different arts. A painter could not paint the flowers dancing with glee as the poem on the daffodils does. It would be interesting to inquire whether Wordsworth always preserves the legitimate limitations of art. These questions illustrate the difficulties raised by Lipps's doctrine of *Einfühlung* or empathy (see his *Asthetik*, from which as well as from his earlier and well-known *Raumaesthetik* I have learned much). Perhaps in the paragraph I am describing rather an ideal, in urging that the expressiveness of the object belongs to the object itself, and I should rather say that the object is beautiful in proportion as it conforms to this standard. And I quite admit that what is said of beauty in this sub-chapter applies more easily to the arts of sculpture and painting than to the other arts. Of music I have hardly dared to speak at all, for I do not know whether sounds and their arrangement suggest emotion as sculptured shapes suggest life and character, which I suspect to be the truth; or whether they mean emotion as words mean the things they name (see note 2, p. 296).

beauty to the objects of knowledge, whose *esse* is not *percipi*, but *esse*, independently of the mind which is compresent with them.

The beauty of the beautiful object lies in the congruence or coherence of its parts. According to the ancient doctrine it is the unity within that variety. Of these elements some are intrinsic to the beautiful thing, and some are imported from the mind and thereby belong to the thing; and it is a condition of the beauty that its external form must be such as to bear and compel that imputation. Disproportion or want of perspective, to take the simplest illustrations, may mar the beauty. Or the material may be inadequate to the effect, as when an architect builds in terra-cotta what requires stone for stateliness. In virtue of the harmonious blending within the beautiful of the two sets of elements, some existing in reality and some supplied by the mind, the unity in variety is also expressive or significant. The beautiful satisfies both the ancient and the modern criterion; and a new reality is generated in which mind and the non-mental have become organic to each other, not in the sense that the beautiful necessarily contains mind, though it may do so, e.g., in a picture of a man, but that its expressiveness is due to the blending of elements supplied from two sources, and the external beautiful thing is beautiful only through this fitness of the externally real elements to their expressiveness. Like truth and goodness, beauty exists only as possessed by mind, but whereas in them mind and the external still sit loosely to each other, and in the one case the mind contemplates an external reality which owes to the mind its truth but not its reality, and in the other case the mind alters reality practically but the practical results do not owe their character to mind but only their goodness; in beauty external reality and mind penetrate each other, and the external thing receives its character of coherence from its connection with mind.

Thus when Kant declared that beauty was so judged because it set the understanding at work in harmony with the imagination, he spoke truly, but according to his

Beauty and  
coherence.

fashion in subjective terms, and so far inadequately. Truly, because, whereas in perception of an external object the imaginative elements are but a part of the real object which is cognised, in beauty the supplementing imagination is independent of what is perceived and yet is blended with what is perceived into a new aesthetic whole. Inadequately, because the beauty or coherence between the elements supplied in sense and in imagination belongs to the aesthetic object, and the interplay of cognition and imagination describes only the condition of the mental process involved in the aesthetic appreciation and not the beauty of the aesthetic thing itself. Such an account considers beauty as a purely subjective character, whereas beauty belongs to the complex of mind and its object, or as I have so often expressed it, to the beautiful object as possessed by the mind. Since the beautiful object owes one part of its constituents to the actual participation of the mind, beauty is in this sense a tertiary 'quality' of the beautiful object, thus conceived.

Beauty  
implies  
coherence  
of minds.

But the analysis of beauty implies something further. The coherence of real external elements with other elements supplied from mind, while constituting beauty, distinguishes beauty from ugliness, and therewith distinguishes the mind which appreciates beauty from that which fails to do so or which sees beauty in ugliness, and unites together the minds which appreciate the beautiful as beautiful. Coherence in the internal constitution of beauty is also coherence among the minds which appreciate it, and exclusion of other minds. The mind for which an object is beautiful is not any mind but one which apprehends or appreciates impersonally or disinterestedly. Beauty in this way involves reference to other minds, and the reason of this or rather the explanation of its possibility is no easy matter. Beauty is not merely something which gives pleasure but which pleases in a certain way, and in a way which can be shared by other minds. For the beautiful object is unlike percepts in this respect, that while a cognised percept is the basis of a judgment, the beautiful percept is the result of judgment. I do not

of course mean that in apprehending beauty we first make the judgment, 'this is beautiful.' I mean that judgments as to the constitution of the beautiful object are a precondition of recognising its beauty. The imagination is detached in the first instance from the perceived external object, say the picture of an animal, and then united with the percept. The beautiful animal implies the judgment, 'I see this painted form alive.' It was the paradox of beauty that expressiveness belonged to the object itself and yet could be there only because the mind which does not enter into the object was yet present and possessed it. Just because such judgments, 'I see this alive,' 'I see this form solid,' 'I see this statue majestic in mind,' are implied in the beautiful work, it is possible for others to take note of my attitude and at once to find the same object beautiful and to share my attitude: to approve both the beauty, and me in my pronouncement that it is beautiful. Thus beauty falls into line with truth and goodness in that like them it is concerned with propositions, and it is only the immediacy of the beautiful object, its likeness to a percept, which conceals from us this truth. Only, the propositions we are dealing with in beauty are different from the propositions of truth and goodness. They are neither ordinary external propositions, nor are they mental propositions, but they are propositions in which mind and the non-mental are combined. When I say, 'I see this painted form alive,' subject and object are linked together in a judgment; whereas when I say, 'This rose is red,' or 'When I am at Stratford-on-Avon I think of Shakespeare,' or 'I am determined to do so and so,' either object and object are linked together in the judgment or subject and subject.

All values thus depend on propositions, and this is the reason why they are exchangeable between persons, and can exclude unvalues. The intimacy of connection between subjective and objective elements in beauty, as contrasted with the relative detachment of them in truth and goodness, seems to give beauty a special and distinctive character. In truth and goodness we have a

relation which may be represented either as between minds or objects ; in beauty, try as we may to exclude the mind from the object felt to be beautiful, we cannot separate them because one part of the beauty comes from the mind, and one part from the external thing. Even when the thing is a simple colour or tone, its beauty does not lie in itself alone, but at least along with the suggestion supplied by the mind, though as it happens verified by the actual object, of its freedom from admixture, its purity.<sup>1</sup>

For reasons dictated by the nature of my inquiry, I have said little or nothing of the psychology of beauty. Beauty pleases in a certain way ; but if we identify what way this is, we shall inevitably be led into tracing mental processes corresponding to what has here been described as coherence within the object, and all that that coherence entails. Doubtless too we shall have to recognise an impulse to identify ourselves with the external thing, so as to reflect into it something from our own experience. But it is not possible to treat beauty as distinctively self-expression. Truth and goodness are equally self-expressive. The impulse to produce stands on the same level as the impulse of curiosity which makes us learn and that of doing which makes us behave ; and in fact all three are practical impulses of different sorts.<sup>2</sup>

<sup>1</sup> See Bosanquet, *History of Aesthetic* (London, 1892), p. 269.

<sup>2</sup> On the topics mentioned in p. 292 note, 1 may refer to A. McDowall, *Realism: a Study in Art and Thought* (London, 1918).

### E. THE RELATIONS OF THE TERTIARY QUALITIES

We have still to trace the relation of the different values one to the other. Each in turn seems to include the others, and this is at first sight puzzling and contradictory. But it is not difficult upon reflection to see that they include and are included in the others in different senses. Thus practice includes both truth and beauty, for each of these is a good or human satisfaction and enters into the Good as a whole. Intellectual and aesthetic satisfactions are as much part of the Good as material satisfactions, such as those whose virtue is temperance. Moreover there is a virtue of truth or beauty as well as of ordinary practical life. For the pursuit of knowledge or of beauty is a practical endeavour and is acknowledged as a matter of moral approval ; partly as a general duty to cultivate these powers, but partly also, in the case of persons specially gifted in these respects, as one principal part of their contribution to the social good. The artist or the scientist or the philosopher are not, as some Greek philosophers tended to think them, set apart from society because of their special qualifications, but are on the contrary included in the society, whose interest or good it is that its members should do the work for which they are best fitted. The philosopher is morally no different from the blacksmith or weaver, but his business is very different, and may be it is a higher or more perfect business.<sup>1</sup> The pursuit of truth or beauty is good in so far as it is carried on industriously and to the full measure of the individual's skill and with due regard for other duties which fall to him as a man. He is to do his special work well, as the weaver his.

Goodness as inclusive.

Now it is clear that science and the pursuit of it are

<sup>1</sup> Compare p. 241 above, and the note.

not good in the same sense as they are true or scientific. A man is not a bad man because he is in error, unless the error is avoidable with due care. The moral defects of the thinker are such as make him unfaithful to his work, *e.g.* laziness or prejudice. His defects as a thinker are his idiosyncrasies which make him an uneven mirror to things. No doubt the two sets of defects (and correspondingly of merits) may slide over into each other: defects of temper or character may mean (as where there is prejudice or prepossession) defects of insight. Thus truth is a good, as the satisfaction of a human impulse according to the measure of its claims as considered along with the claims of other human impulses; it is true, in so far as it achieves its own purpose. Compared with the moral end, truth as truth is technical, just as being a skilful blacksmith or surgeon is technical. Truth is involved in goodness in yet another and more obvious way, not as a department of the moral end but as a means of guiding action, which needs knowledge of human nature and of the conditions of action. Here plainly truth is technical; it is the element of wisdom or insight which has always been acknowledged as an ingredient in goodness and sometimes has been treated as a virtue. Whether truth is a special part of the moral end, or in the shape of wisdom an ingredient in moral action of all kinds, truth as truth is technical for morality, which is concerned with the value of human character and with truth only as part of it or a means to it.

Beauty as  
inclusive.

In the same way, just as beauty is one part of the good and to pursue it is a virtue, so goodness and truth are species of the beautiful, or they have their aesthetic side. Some parts of mathematics have been described as poetry and certain methods in science are, to indicate an exceptional excellence, justly called beautiful; and good actions may have beauty or grace or sublimity, or a life may be a true poem. The aesthetic feeling in these cases is indistinguishable from the mere 'logical' sentiment for truth or the moral sentiment of approval. What is true or good is treated much as we treat a piece of

natural beauty, where as we have seen the supplement imported by the spectator may happen as a matter of fact to be present in the thing, but this is only accidental for the aesthetic appreciation. Thus the beautiful theory seems to us animated by a purpose or appears to be the creation of some constructive mind, which though it is not in the theory in itself is true *of* it. Or the noble life is for us a work of art, the outcome of some imagined exaltation of mind or refinement, like the life of Pompilia as the Pope fancies it in Browning's poem.<sup>1</sup> It is not the goodness of the life as judged by mere morality that is beautiful; the spectator does not so much sympathise with it morally as blend himself with it into a new unity. Thus as before what is true is not beautiful in the same sense as it is true. To be true it follows the tests of science. It is for beauty technical, just as the material which is to be the Hermes observes the technical limitations of marble. And in like manner of the beauty of goodness. Consequently badness may (like Iago's) be beautiful, but not for the same reason as it is bad; and even error, like a well-wrought but fallacious theory, but not because it is fallacious.

The case of truth is somewhat more complicated. There is a goodness of truth-seeking and a beauty of truth. But also goodness and beauty are each of them a department of truth. This must be understood in a double sense. In the first place goodness has its truth, much as truth has its goodness; goodness (or beauty) is technical for truth. That is, goodness is the truth of human nature, and badness the error of it, and in the same way beauty is true and the ugly erroneous. And even as truth prevails over error and excludes the erroneous proposition from the realm of reality, so goodness tends to supersede badness and beauty ugliness. The unvalues are morally false or aesthetically false, just as the erroneous proposition is false. Yet, goodness and beauty, though

All values  
included  
in truth.

<sup>1</sup> The marvel of a life like thine, Earth's flower  
She holds up to the softened gaze of God.

*The Ring and the Book*, X. ll. 1018-19.



they thus share in the nature of truth, follow each its characteristic nature. They are not true for the same reason as they are good or beautiful. Consequently a murderer may possess profound knowledge of anatomy, and a learned historian of poetry be a poor poet. In this respect then goodness and beauty are technical for truth.

But there is a different sense in which these considerations do not arise and in which goodness and beauty are not technical but merely parts of truth or reality. For goodness and badness, and beauty and ugliness, are, like truth and error, themselves new realities and take their place in the whole of reality, alongside realities of a lower order. The facts expressed in the sentences 'this is good' or 'this is beautiful' are realities. Moreover not only are the moral and aesthetic judgments realities, but also the good or bad acts or good or bad volitions (the constituents of the moral situation), and likewise the objects, which are beautiful or ugly, taken apart from the aesthetic judgment of them, are real. Thus truth and error, goodness and badness, beauty and ugliness, are all realities among the sum total of reality. Now truth we have seen is reality as possessed by mind, and hence in this sense the other values are parts of truth and truth is all-inclusive, because its object is reality. True knowledge therefore comprehends the whole of existence, including truth and error itself. It must not be said that we are introducing here the much talked of infinite regress, that if truth itself is part of truth we are making truth a mere *object* of knowledge, which it cannot be. For truth is already a possession of the mind and the truth of truth is but truth over again. In the same way the truth of those realities which are goodness or badness is but those partially mental realities over again. We may judge 'such and such is good' practically. But to do so is also to possess that reality as something which, although we first bring it into existence, we find and watch when it has been made. We make the work of art, but when we judge it beautiful, its beauty is something which then we find in reality. An angel looking on at our world would see our truth and goodness and beauty and their corresponding unvalues as

parts of one reality with rocks and stones and trees. What we do in including them along with purely external things within our purview of true knowledge is to possess them, some by contemplation (the rocks, etc.); others by enjoyment, like the proposition 'I am envious'; others like goodness or beauty or truth partly in enjoyment and partly in contemplation.

Thus all things of whatever grade of reality enter into truth or true knowledge, because truth follows reality and leaves it undisturbed in taking possession of it. Hence it is there can be science of everything, so far as things are revealed or adumbrated for us. We can hence speak of deity as real though we cannot know it except by foreshadowing it in thought, as shall soon be indicated, or including it as something that satisfies the religious sentiment. Thus from the point of view of philosophy, all things in space and time fall within truth so far as mind can possess them. Science is supreme, for it is another name for reality in all its forms as possessed by minds which think rightly or are attuned to reality. On the other hand from the point of view of man, practice is all-inclusive, for the quest of truth and that of beauty, like the quest of material bodily satisfaction, are practical tendencies. Regarding man as the highest finite, his practice, which includes discovery of truth and creation of beauty, we must pronounce to represent man at his fullest. But the discovery and pursuit of truth are not truth itself, and since truth means the possession of reality by mind, we must say that while goodness is the highest manifestation of finite existence which we know, truth represents the whole of reality, while beauty is intermediate in position between the two, being that kind of existence in which neither does mind follow reality as in truth, nor is reality moulded by mind as in willing, but the two are interwoven.

## F. VALUE IN GENERAL

Tertiary  
qualities as  
(1) rela-  
tions ;

The tertiary qualities are not the only kind of values, though it is they which in the strictest sense have the right to the name. The more general sense of value has been already indicated in the case of good and evil. Within the human region there are the values we attach to such qualities as courage or good health ; and there is the whole department of economic values. These transitions between the different sorts of value in man suggest that value in a more extended sense reaches lower down than man, and perhaps is a common feature of all finites. I shall first trace the gradations of human values, and then attempt to show how value appears on lower levels than that of consciousness or mind.

Certain features of value have emerged from the study of tertiary qualities, which it is desirable to recapitulate, because they furnish the clue.

In every value there are two sides, the subject of valuation and the object of value, and the value resides in the relation between the two, and does not exist apart from them. The object has value as possessed by the subject, and the subject has value as possessing the object. The combination of the subject and the thing which is valued is a fresh reality which is implied in the attribution of value to either member. Value as a 'quality' belongs to this compound, and valuable things, truths, moral goods, works of beauty, are valuable derivatively from it. The same thing holds of the subject which values and is also valuable,—the true thinker, the good man, the man of aesthetic sensibility.

Value is not mere pleasure, or the capacity of giving it, but is the satisfaction of an appetite of the valuer. It satisfies the liking for knowledge, or for doing, or producing. Even the breast is valuable to the infant because it

satisfies a need for food. Values arise out of our likings and satisfy them.<sup>1</sup>

Value pleases but it pleases after a certain fashion. (2) typical ; What this fashion of pleasing is has been shown to be social. But this criterion contains two features, one of which is special to the tertiary qualities, the other is more general, and it is this more general feature which concerns us. Value has reference to a type, and it relates to the individual only in so far as he represents a type. The individual may like or dislike certain things, but in the proper sense they have value for him, if they satisfy him as typical ; and his individual liking may be altogether disproportionate, as the liking for alcohol, to the value of what he likes. What is called 'subjective value' (*Werthhaltung*) is not in itself value but is a derivative conception, and so far as it is *value* implies the existence of 'objective,' which is really the only, value. There is no such thing as truth for an individual. A mere belief entertained by him has not truth as an individual belief. It is only true if he has the truly judging or scientific mind. When a person says he values something, though it may not be valuable in itself, or he has a sentimental value for something, he is using language borrowed from the current conception of typical value, or else he is counting on the truth that his particular likings are legitimate and would be so approved. For the typical standard recognises the greatest diversity in the particular applications of it by individuals, provided they possess the spirit of the type.

The other or distinctive feature in the value of the tertiary qualities is that they are not merely typical or have relation to the human type of animal but belong to a type which is intrinsically social. Its sociality is displayed or expressed in its use of language, which consists of propositions. In all the tertiary qualities the perspectives of reality before the mind are judgments. Even the beautiful thing, though an object of perception, depends on judg-

<sup>1</sup> The contrast of liking and pleasure is taken from Mr. J. S. Mackenzie. It corresponds to Mr. W. M. Urban's contrast of feeling-attitude and feeling-tone. For the works referred to, see note, p. 307.

ments. Judging and sociality are convertible. For in judgment our objects or propositions come directly into relations of agreement or conflict with other persons. In judging a fact or willing one, our objects are patent to the observation of others as ours. In judging, it is we who take the reality to pieces and rebuild it so as to discover its real structure; in willing, the deed is not merely the reaction to a percept but is our deed. We are not merely like dogs quarrelling for a bone, aware of each other perceptually, but are aware of each other as like or different from ourselves. Language is the direct communication with one another about our objects. Even our percepts when described become judgments. Judgment accordingly contains in itself a social suggestion, and a judgment of value is intrinsically social, and is related to a social type.

Reflective  
and in-  
stinctive  
value.

Thus value in the form of the tertiary qualities emerges not with consciousness or mind as such, which the animals also possess, but with reflective consciousness, or judgment. But men are not merely social beings but are animals of a certain type. Accordingly like the animals they pursue objects which are relative to the animal type and have what may be called instinctive value or quasi-value. The breast has instinctive value for the child, as the lion or tiger values instinctively its prey, or the bird its worms. Such objects are valuable in so far as they promote the type, are necessary to the infant's growth and the like.

With human beings, these instinctive values are overlaid by the values proper and they are not commonly regarded as values. But they are familiar in the habits of personal cleanliness or other regard for one's body, or in the coyness of the female; such habits are typically liked or 'approved' but instinctively. They may in their turn become the subject-matter of reflective judgment, as when the modesty is injured, and then we have the feeling, half-instinctive, half-reflective, that such a habit as modesty is a *duty* to oneself—a notion derived from

the grafting of the social judgment upon the instinctive one.<sup>1</sup>

Still within the range of instinctive or quasi-value but with the social element superadded, or beginning to be superadded, is the admiration we feel for qualities good for the type; e.g. for courage, not as a habit of will but as a personal endowment—pluck, or for high spirits, or good looks, or strength, or hearty appetite. Such admiration is not approbation in the sense of moral approbation, but it is next door to it. It has a very extensive range and may be called instinctive approbation. It enters into our social or moral judgments in so far as the possession of natural gifts makes the character a bigger or more perfect one, though not a better one, and lies at the foundation of degrees of merit, as distinct from goodness. Even mere strength of will is meritorious as a personal excellence, and, as has been observed before, it accounts for our sometimes preferring the character which prevails against temptation, while the instinctive approbation for natural gifts accounts for our seeing greater merit sometimes in the other class of cases. In like manner our sympathy with mere outward good fortune in our fellows is the source of our admiration for such persons, though this consideration was stronger with the Greeks than perhaps with ourselves.

An approximation to this overlaying of instinctive by social values is found among the animals which live in societies, where there is yet no judgment and the sociality is not so much intrinsic as with ourselves but remains instinctive gregariousness. There is approbation and disapprobation, but it remains purely unreflective. Instances are the 'justice' meted out amongst rooks and bees. How instinctive the values are may be seen from the interesting experiments of Mr. A. Bethe on ants. When individuals of an enemy tribe were smeared with an infusion of the chopped-up bodies of the first tribe they were received into the nest, and friendlies smeared with

<sup>1</sup> An illustration occurs in Mr. Galsworthy's novel *The Man of Property*, towards the end.

a hostile infusion were repelled; apparently in both cases on the ground of the smell.<sup>1</sup>

Economic  
values.

Economic values stand midway between instinctive values and the tertiary qualities. They do not so much blend with moral valuation as in the cases just discussed, as rather they exhibit the operation of reflective judgment upon instinctive values. As they are, of course, affected in all manner of ways by moral considerations, it will be best for simplicity to take the economic society whose interests are directed solely to securing livelihood, as in the Platonic "State of pigs." So far as this is true, things and services have merely instinctive value—food, drink, the service of the mother to the child and the like; and there is no moral value proper, just because there is only one, namely living itself. But since men are not merely conscious beings, but judge and are related to one another, the problem set them is how to distribute different goods so as to secure the maximum satisfaction of vital wants. This is done by the reflective process of demand and supply. The determination of values which this process secures reproduces on a lower level all those features of the settling down of moral claims into equilibrium upon which moral values depend, which were described before. It is however merely using reflective machinery to satisfy the wants of life and is therefore instrumental to this end. It involves reflection and is thus akin to moral valuation; reflection comes in to modify mere perceptual experience. But the individuals co-operate and compete, not as they do in moral valuation, so as to determine in the issue what the moral or social type shall be, but so as to secure the most effective distribution within a type of social existence already fixed. Such a simple state of affairs is only an abstraction, to which primitive societies, whether of a nomadic hunting type or an agricultural one, are approximations.

<sup>1</sup> A. Bethe, *Dürfen wir Bienen und Ameisen psychische Qualitäten zuschreiben?* (Bonn, 1898); from *Arch. f. d. g. Physiol.* Bd. 70. In W. J. Courthope's Aristophanic comedy, *The Paradise of Birds*, there is a delightful passage describing the justice of rooks as the exemplar of human justice.

When we advance beyond the state of pigs to a society with moral values, we find that the relation of economic to moral value remains the same. Life has ceased to be the only interest; other interests compete with mere sustenance of life, though that remains fundamental. Moral valuation determines what the persistent type of distribution of satisfactions shall be, how far for instance it is right for me to gratify a taste for possessing pictures, or for business, or for helping my neighbours. But economic valuation merely determines what place in the system of commodities and services a picture has; there is no question of the legitimacy of my taste for pictures, but only of how much I must exchange of other commodities in order to possess them. In other words morality determines what the type of society shall be; economics assumes this type and considers the machinery for sustaining it. Its values are instrumental, while those of morals are described as intrinsic. Moreover in the more highly developed social type the instrumental character of economic valuation becomes clearer; because there are other ends than mere living. In the state of pigs the instrumental process and the process of living, which consists in eating and drinking and the like, tend to be coincident. Economics therefore stands to ethics in the relation of individual to social psychology. In practice the distinction can never be maintained with this rigidity, because of the constant repercussion of morals upon economics. The social type of distribution is perpetually changing, and moral considerations come in to correct the economic inequalities or unfairness of the existent social type.<sup>1</sup>

These gradations amongst the various forms of value in men from the tertiary qualities which are values in the strictest sense, down to instinctive values, through the

Value in  
general.  
Problem  
VI.

<sup>1</sup> In the preceding paragraph I have derived much help for thinking out the problem from the Austrian philosophical writers on value: A. Meinong, *Psychologisch-ethische Untersuchungen zur Werttheorie* (Graz, 1894), Ch. Ehrenfels, *System der Werttheorie* (Leipzig, 1897-98), and also W. M. Urban, *Valuation, its Nature and Laws* (London, 1909), a



intermediate stages of blended values and economic values, prepare us to find that value exists, below man, or reflective consciousness, and is found in its essential features on the level of mere life, amongst the plants and animals; and that it is not the intrinsic features of value which vary, but only the subjects of valuation, and with them their objects, which are different at different stages of development in Space-Time. On the level of life value exists as the persistence of adapted forms of living being. To an adapted type that part of its environment on which it can react so as to sustain its life has value for the type, and the individual of the type is the corresponding subject of value, or it is a valuable form of life. The unvalues are those individuals or types which in their conjunction with the environment fail in competition with the values, and are eliminated; and they include not merely the unsuccessful types but the individuals of the successful type which vary too far from the standard and correspond to those human individuals whose idiosyncrasies are too marked to be compatible with the social type.

All the essential marks of value as exhibited in the tertiary qualities are here reproduced in the form suitable to the level of existence. In both cases value resides in the compound of the subject with its object. A creature may have value under one environment (like the blind animals that live in caverns) which would have none or less in other surroundings. The process by which permanence of valuable type is secured is the rivalry by which the failures are excluded. But it is more important to state the case reversely. The values of truth, goodness, and beauty, and their unvalues, arise by a process of competition amongst reals which has begun below the human level. The minds which judge truly, or behave rightly, or produce or recognise beauty, are the successful types developed on the level of mind, when to conscious-

work belonging to the same school and full of suggestions in detail, and from Mr. J. S. Mackenzie's *Elements of Constructive Philosophy* (London, 1917), Bk. II. ch. viii. (See also his article in *Mind*, N.S. vol. iv., 1895, 'Notes on the theory of value,' describing and criticising the Austrian writers.)

ness are added reflection or judgment and with it intrinsic sociality. The differences which seem to separate the tertiary qualities so completely, and are thought to make human life unique, arise merely from this difference in the subjects. In the first place the competition of valuable minds implies the rejection of the unvaluable ones, but it does not as on the level of life imply their destruction. It is only the error or wickedness which is rejected, not the sinful or misunderstanding man himself. For the prevalence of truth it is enough that he recognise his error; for the prevalence of goodness that he be reformed. Minds can within limits take new perspectives of things "on better judgment making," without the destruction of the body to which the mind belongs. They have the superior plasticity of the reflective consciousness. In the second place, because the tertiary qualities are values of judging subjects, their values are settled not merely by competition with unvalues but by co-operation amongst themselves. That is their social character. There is in general no such sociality among mere living forms. The type is given in individuals of the same kind, but it is not in general a type in which individuals have their special contributory rôle towards a common good. If a parallel is wanted for the social constitution of man it is to be found in the organisation of cells within the individual.

Darwinism is sometimes thought to be indifferent to value. It is in fact the history of how values come into existence in the world of life. How the successful organism itself comes into being is a matter of controversy on which the layman is not free to enter; whether by slow accumulation of small variations, as Darwin himself supposed, or by large mutations. The doctrine of natural selection explains not how types are generated, but how they come to have value. It is so far from being indifferent to value that it is wholly concerned with value; its very meaning is that values emerge through the trial of various types under certain external conditions, which trial determines whether in virtue of its gifts or constitution a type is worthy. For like our human

Darwinism  
and value.

values, value in the organism belongs not to the organism in itself, but in its relation to the conditions of life, and accordingly a type which can persist under certain conditions may be unsuited to different circumstances, much in the same way as we approve conduct which is forced upon us by the stress of circumstances, though under normal conditions we should condemn it. The doctrine of natural selection gives us thus the natural history of values in the world of life, and we now see that it supplies equally that history in the world of mind.

The reason why Darwinism has been thought to be indifferent to value is that natural selection has been misunderstood to be, not what it is—the process by which values are established, but the actual cause of successful types. On this misconception the fittest is what survives, and the survival of the fittest is equivalent to the tautology—the survival of that which survives. Value appears therefore as an impertinent intruder. But as was clearly enough indicated by the title of Darwin's own work, the survival in question is that of the most favoured races. It is not natural selection which is the cause of success, but the gifts of the types engaged in competition, and competition is but the process through which their gifts receive expression. The cause of success in war is not fighting, which is warfare itself, but the character and resources of the combatants. To believe otherwise is parallel with another half-truth, that because nations establish their ideals by force, force is the ideal of national life. When this misconception is dissipated, natural selection is recognised to be wholly conversant with value. Competition is the means to the supremacy of the adapted over the unadapted types, and brings value into being by the rejection of unvalue.

The range  
of value.

How far downwards below the level of life the principle of adaptation or valuation extends is at present matter of speculation. I have ventured to suggest that the permanent forms of matter (chemical elements) and of energy are themselves the outcome of a corresponding process. Even if this cannot be regarded as more than

a guess we can see why it may be expected to be true. For values imply in their simplest expression something which does not depend on the living or conscious character of the subject of value but applies to any finite complex of space-time. Things are relatively independent volumes of space-time with a certain internal and external configuration; into which the whole Space-Time breaks up. Adaptation is the return of these complexes out of separation from the whole into unity with it. Only point-instants which have no complexity of structure are from the first and always adapted to their surroundings. The complex combinations of them may be, and in the case of living and higher forms sometimes are, inconformable to the other complexes to which they respond and in responding maintain themselves. The competition of the reals which are composites of things and their environment is the settling down of this variety into stability. It is not man alone who experiments; he does but experiment consciously. Nature herself is the scene of ceaseless experimentation, of which there are many grades traceable downwards, from conscious experiment, through the plasticity of trial and error by which living and especially conscious types are able to vary within certain limits without destruction, down to the simpler process of the extirpation of the unfit, and perhaps to a process simpler still. The values strictly so-called, the tertiary qualities, are but the highest instance we know of a feature of things which extends over a much wider range, and is founded in the nature of Space-Time itself; and may even be empirically universal. Supposing that the process begins with living forms and does not obtain below, we must be content to say that the empirical things on the lower levels are so simple in structure that they do not come into competition with one another. But what evidence there is points in the direction of the universal prevalence of the process.

There is however in this exposition of value a weakness, arising from the presence of an unsolved problem, which has been mentioned before<sup>1</sup> and must be named

A lacuna.

<sup>1</sup> Bk. II. ch. iii. vol. i. p. 229.

explicitly again in this place. Value depends on adaptation, and adaptation is an *a priori* character of empirical things, their return from isolation into communion with the rest of the finites in Space-Time. And adaptation assumes the character of value through the rejection of the unadapted unvalues. This process involves the existence of many more or less closely allied forms between which the competition takes place. It implies the empirical fact of the actual repetition of universals in a multiplicity of particulars. For it is all one whether we consider a multiplicity of individuals, or a multiplicity of types falling under a wider universal, and indeed the competition of types takes place between individuals of those types. Valuation then presupposes this unexplained empirical feature of things. Can any explanation of this empirical feature be found? If not, then it must be accepted, like quality which we have regarded as the distinctively empirical element in things, as another empirical element. The grave metaphysical lacuna in our scheme which would then be left has been mentioned in the previous passage. A universal implies the possibility of many particulars in which it is realised. But the actual multiplicity of particulars remains as a mysterious residuum. It is more hopeful to believe that we have here not a mere empirical feature of things, like quality, but a feature which has its foundation in some fundamental character which belongs to all empirical or qualified finites, and constitutes another of what we have called the empirical problems. For it is clearly not on the same footing as quality. Quality is always equivalent to a certain spatio-temporal complex. What was distinctively empirical in it was that such a complex should be the bearer of a quality. Now multiplicity in the realisation of a universal is itself something spatio-temporal, being a numerical determination.

But if, as thus seems probable, it is one of the *a priori* empirical problems, I can see at present no solution of it: no way of connecting it as in the other empirical problems with Space-Time as such. Why there should be finites within the general matrix, we can understand; for

Time and Space, being indissolubly interwoven, do not remain extended blanks, but break each other up into differences. We cannot however see, at least I cannot, why these finites should exhibit actual repetition in their kinds. Perhaps we know too little at present about the repetition of individuals among organic forms to be able to face the more general and simpler problem. Molecules of carbon or gold are repeated in vast numbers, like oaks and men. Is the multiplicity of individuals like men or oaks due to the sporadic birth of these types in different quarters of the globe, or to reproduction from one or a pair of individuals? Are we to suppose that the multitude of carbon molecules were generated independently of each other: or is there something in every finite which we may compare with the proliferation of cells or the reproduction of organisms in their progeny; or with imitation and tradition, such as we find amongst men? And if the latter, how is this something connected with the purely spatio-temporal character of every finite? I can give no answer, and until the answer can be given I must admit that the scheme of things which has been suggested as a hypothesis, and has so far been verified, presents a grave defect; equally so, whether the actual multiplicity of individuals in their kinds is accepted as a purely empirical feature not admitting of explanation, or as an unsolved empirical problem.

Two observations are worth making upon our result Corollaries. that mind in its highest manifestation, that of the tertiary qualities, is no isolated or exceptional thing, but as in its knowing, and as we shall presently see also in its freedom, is but a specimen of something more general. The first is almost obvious, that the human values are none the less precious for that. He who fancies that the community of our values with the lower 'values' destroys the fine flavour or sacredness of truth or goodness or beauty, forgets that to describe correctly does not alter the reality described. If the doctrine of Berkeley were true that things owe their existence to mind, the solid material world would remain solid and material as before, and Dr.

Johnson's refutation of the doctrine still irrelevant. The preciousness of the values consists in their being values, and there is no standard of value by which to judge values themselves. On the contrary the human values by being thus related to other values do not lose their preciousness, but in fact preserve it by forfeiting their mystery. Human nature does not lose by becoming intelligible but comes into its own.

The second observation is less obvious, but is a corollary. It takes the form of a protest against that philosophical method which adopts value (by which is meant human value) as the clue to the nature of reality, because it is the highest of our experiences about finite things. The values are practically precious, but not therefore more real than other realities. They take their proper place in the scheme of empirical things, and they do exhibit to us a fundamental feature of reality as a whole. But we dare not start with the unanalysed conception of value and measure reality by it. To do so is to erect what weighs most in our human existence into the exemplar of reality, and to assign to value blindly a function which it cannot perform. It discolours the truth with our affections, and it interferes with what Goethe described as our business in acquiring knowledge, of laying our minds alongside things. It has authority in the example of Kant. But Kant's exaltation of one of the values was the price which he paid for his failure in theoretical speculation to discover the *a priori* features of things in the things themselves. Whereas when values are analysed or described, they are seen to fall into their places as incidents (though of the highest interest for us, outside the religious interest) in the empirical growth of things within what is really the primary reality of Space-Time.

## CHAPTER X

### FREEDOM

MAN is free, and his freedom has been supposed on one ground or another to separate him from the rest of creation. As free, he has been thought either to be exempt from causality, or to possess a causality of a different sort so as to be independent of determination, like the rest of the world, by some antecedent cause. If it were so, causality would no longer claim to be a category as entering into the constitution of every form of finite existence. But we are already familiar with the notion that mental processes affect each other causally, and that a mental process may be the cause of a non-mental one or the effect of it. It remains then to identify the consciousness of freedom that we possess. It will be seen that freedom is nothing but the form which causal action assumes when both cause and effect are enjoyed; so that freedom is determination as enjoyed, or in enjoyment, and human freedom is a case of something universal which is found wherever the distinction of enjoyment and contemplation, in the widest sense of those terms, is found.

Enjoyed determination is that species of determination in which both the determiner and the determined are enjoyed. Contemplated determination is that species in which both events are contemplated, and it comprehends all instances of causal relation in the non-mental world, in so far as these are treated merely as objects of contemplation to some mind, and not regarded as themselves subjects of enjoyment, in an extended application of that last term. Besides these two, we have the third species to be mentioned, where one of the members of the relation

Freedom as  
determina-  
tion in  
enjoyment.  
Problem V.



of determination is contemplated and the other enjoyed. Since in this third species, though the other member of the relation is contemplated, I do enjoy being determined or determining, it is perhaps better to call that kind of determination in which both members are enjoyed, not simply enjoyed determination, but determination in enjoyment.

Verification  
from ex-  
periences of  
freedom and  
unfreedom.

The proposition that freedom is determination in enjoyment is of the same sort as the familiar doctrine that freedom is self-determination, though it is more general. All that it does is to translate self-determination into other terms. I may illustrate its meaning and its reasonableness from common experiences of the occasions when we feel ourselves free, or unfree. Begin with the case last mentioned. We are free to open our eyes or not, or to direct them anywhere, but we are not free to see or not: we are passive or under compulsion in respect of our sensations. At the other extreme, in willing freely, we enjoy the determination of one mental state by another. A passion of anger induces the idea of striking and this idea passes into realisation: as Mr. Bradley says, an idea realises itself. The consciousness of willing is the enjoyment of the passage of such an idea into fact, and has been analysed before.<sup>1</sup> The real nature of willing is clearer from such cases of internal willing than from those of willing an external action. Yet it is clear in these cases too. I will to strike a man, and the idea of striking him is realised in the last mental state which is effective and issues in the actual striking. In the continuously enjoyed passage from motive to idea of action and thence to this last effective mental act I enjoy myself as willing and as willing freely. This continuous enjoyment is prolonged into the perception of the blow. The blow itself is indeed a physical event and contemplated, and in respect of it we have a case of mixed determination. But while I should say undoubtedly that the blow was caused by me, it is only in so far as I perceive the blow (by kinaesthetic sensations and per-

<sup>1</sup> Above, ch. ix. B, p. 248.

ception of the results of the blow) that I am aware of myself as being free in the mere act of striking. If I were anaesthetic and unaware of the effected act I should so far as that part of the situation is concerned not be aware of having struck freely. As it is, I am aware of the perception of the blow as determined by my previous mental states, and I feel myself free from one end of the self-determined process to the other.

Willing is not the only kind of action or condition in which we may feel free. For example, we have this consciousness in instinctive processes, where one mental state leads on to another; or in what we call the free play of the imagination, one fancy suggesting another, where the word free does not merely mean the absence of interference from thought or the higher self. In the same way we experience unfreedom not only in antithesis to freedom in willing, but otherwise. The most obvious case of unfreedom of will is that of action under physical compulsion. Our action is determined not by an enjoyment but by a physical cause, and the case is on the same level as the passive reception of sensations. Here the will might have come into play and did not. But there are cases which do not concern the will at all. An unaccountable outburst of anger, or a mental obsession, makes us feel unfree, because of the absence of any determining mental state. There are also conditions in which we feel partly free and partly constrained. Thus a train of instinctive or perceptual action is free so far as it follows the line of mental predetermination, but it is also guided by external objects to which we feel ourselves compelled to adapt ourselves, and are, so far, unfree. Even in the free play of imagination we are continually subject to constraint by the objects created by our fancies: "we depend on the creatures we have made"; and, so far, imagination is like perception. As we grow, we learn that our imagination is most truly free and most our own when it most conforms to verisimilitude—the lesson which underlies Plato's use of the imagination in education; just as in conduct we find as we grow that our highest freedom consists in recognition and welcoming of lawful restraint,

so that from the mere action of our selves we act within the limits of general human advantage. So, again, in willing we have the mixed experience of freedom and unfreedom where we yield to threats or *force majeure* of any sort and do actions we should not under normal circumstances have willed. We feel ourselves unfree because of the external compulsion, but free so far as the act issues from our intention, however formed.

In all these cases the experience of unfreedom is compatible with responsibility, and the two questions, of consciousness of freedom, and responsibility, are to be distinguished. A drunkard may do in a fit of drunkenness an act of which he is unaware or, at any rate, of whose meaning he is unaware; and yet he may be responsible. Even an obsession, or an outburst of fury, may leave a man responsible though he feels himself the victim. Responsibility depends on whether the man's own previous conduct has contributed to his enslavement. On the other hand, there may be cases where, as Mr. Bradley has pointed out,<sup>1</sup> the passive compulsion may be of such a nature as to paralyse the will and destroy the conditions of willing; and the person, for all his remorse, may really be unfree and not responsible.

Confirmatory exceptions.

Certain facts which seem at first sight contradictory to the general statement that we feel free or unfree according as a mental state is or is not enjoyed as determined by a prior mental state or the outcome of it,<sup>2</sup> confirm the statement on examination. Thus in the play of fancy we feel free; but relatively to this a mere routine association of ideas seems, as we say, mechanical. Sometimes we feel ourselves the slaves of such routine habits; as in Locke's case of the young man who could only dance in a lumber room because it was in a lumber room he had learned dancing; or in James's case of a man who, having gone to his room to change his clothes, went to bed by force of

<sup>1</sup> *Ethical Studies*, Essay I. Note A.

<sup>2</sup> Compare Mr. Stout's *Analytical Psychology*, vol. i. Bk. II. ch. i., 'Concept of Mental Activity,' esp. p. 148. "Mental activity exists when and so far as process in consciousness is the direct outcome of previous process in consciousness." I am of course greatly indebted to this chapter in the above.

habit. The reason why such processes seem mechanical, though the person may not at the time be aware of any compulsion, is the want of intrinsic connection between the actions. One mental state is succeeded by another, but the connection is an accidental one, due to the external conditions. I have experienced A and B together, and so the apprehension of A is succeeded by that of B, but there is no development of B from A so that correspondingly the one mental state should be an outcome of the other. Thus so far the feeling of determination of one enjoyment by the other is missing. In proportion as this occurs will be the feeling of unfreedom, unlike the case of a spontaneous process of reflection where one idea is felt to be the outgrowth from another, and not a mere artificial sequence on it.

Another apparently exceptional case is that of the sudden upspringing of new mental states which may mean giving a new bent to a person's life or a new direction to his thinking; for example, in conversion or in inspiration, where a new idea comes into the mind like those unaccountable outbursts of passion mentioned before. From one side these cases confirm our statement. For the person himself regards these sudden changes as coming to him from elsewhere, for example from God, and imposed upon him.<sup>1</sup> It may happen indeed that a person is conscious, in these cases, of intense personal initiative; but this is because he disregards the passive or mentally uncaused uprush of the exciting emotion and is vividly attentive to the passage of the emotion, once it has possessed him, into the action he adopts. On the other hand these facts are often taken to suggest that whatever a man's conduct or thinking may have been he still has power to change; and so regarded they are treated as evidence not of unfreedom but of freedom. But this must I think be regarded not as a first-hand experience on the part of the persons in question, but as an interpretation of that experience or a theory about it. So far as the direct experience goes, it is in favour of passivity. What is meant is that there must be something in the

<sup>1</sup> See above, ch. viii. p. 221.

person to account for such revolutions. It is however easy enough by a counter theory to urge that these unexplained resources are to be found in elements of the man's whole nature, including his body, which have not yet come within enjoyment. In other words the outbreak is determined by contemplated conditions and the experience of unfreedom, which is what the person actually has, is justified.

Lower and  
higher  
freedom.

But the best support of our proposition is to be found in comparing lower and higher experiences of freedom. The more we feel ourselves determined by our own enjoyed mental states, the keener the consciousness of freedom. Hence freedom in a special sense belongs to the will. For in willing not only does the idea of a wanted object realise itself, but in that process it is supported by large masses of ideas and dispositions which constitute interests, and in the end it is supported by the whole self, and freedom is eminently the consciousness that the whole or large masses of the self are consenting to the adoption of an object. Here also eminently we have determination in enjoyment. Relatively to such action of the whole self, isolated streams of enjoyed determination seem less free, mechanical. Moreover, experience shows us that such complete determination by the personality on all its sides is more attainable in the good man than the bad one. For goodness is essentially the balanced development of all sides of human nature, its personal and its social elements all included; and though the bad man may exhibit a high degree of organisation under some mastering impulse, he in general leaves certain sides of his nature undeveloped or else is wanting in certain necessary elements of character. Hence the distinction of two senses of freedom, the one in which it means merely freedom from external determination, that is, it means determination by the man himself; the other in which it is equivalent to goodness. In the first sense the bad and the good are both free; in the second sense only he whose self is an exhibition of law is free, and badness is the slave of its passions. Benjamin Franklin had the idea in earlier life of forming a sect of "virtuous and good men of all nations" which

he proposed to call the "Society of the Free and Easy"<sup>1</sup>—a title which we should hardly use with the present meaning of those words. Thus as the outcome of examining our experience of freedom it appears that we are most eminently free when we most enjoy determination by our mental states and dispositions.

Returning from this survey of the data, we have now to see that the notion of freedom as determination in enjoyment is proof against the difficulties which may be and have been urged against it, or have been thought to make freedom something *sui generis*.

Freedom  
and pre-  
ference.

Freedom in willing or freedom of will is felt most obviously in choosing between two or more alternative courses. The consciousness of freedom is the consciousness that we choose between them. The so-called *fiat* of the will is in fact nothing more or less than the consciousness that it is we who are consenting to the act, or that the motive adopted proceeds from the self or character. But choice between two alternatives seems at first sight to distinguish completely between voluntary choice and ordinary physical causality. For when two forces are operative upon a physical body the effect is the resultant of the two effects of the separate causes; whereas in choosing, one or other motive is adopted and the other disregarded. In general we do not in consequence of solicitation by two sets of considerations choose a course which is midway between them. We adopt one or the other; and the defeated inducement is rejected entirely. We have however to observe that the rejected inducement does not or may not cease to exercise

<sup>1</sup> Franklin's explanation is: "free, as being by the general practice and habit of the virtues free from the dominion of vice; and particularly by the practice of industry and frugality, free from debt, which exposes a man to confinement and a species of slavery to his creditors" (*Autobiography*, ed. Bigelow, New York, 1909, p. 207). The phrase "free and easy" was generally used at that time to mean well-bred and elegant ease of manner, and it implied merit. "Lady Darnford also made me a fine compliment," writes Pamela on "Sunday the 4th day of my happiness," "and said I looked freer and easier every time she saw me" (Everyman's edition of *Pamela*, vol. i. p. 344).

its effect. The temptation we resist may continue to tug at our hearts and we persist in its despite—a fact familiar in cases of what is called action in the line of greatest resistance. Strictly speaking, we act in the line of least resistance because we act from our characters. But the inducement, which appeals to one part of us and is defeated with effort by summoning up to the help of the other part all the reserves of our character, may continue to exert its fascination.

This observation indicates the real answer to the difficulty. Consciousness attends, or is borne or carried by, a structure or body more complex than a physical body, less homogeneous in its constitution but at the same time exhibiting closer co-ordination of its parts. The greater complexity in the constitution of the higher existents means that their response to stimuli is more plastic in character. The mechanical and the mental are not, as has been observed before, separated from each other by absolute differences. In the mechanical there is an element which performs the office of mind, and in the mental there is something which performs that of body. Each responds according to its constitution. Even the mechanical body responds differently to a blow according as the body is a wall or a piece of putty. The relative simplicity of the physical body excludes preference of one stimulus to another; each exerts its effect and the two effects are combined in the resultant. Preference implies a greater complexity; but it does not begin with man, but with life. Lowly organisms like algae may exhibit preference, avoiding one form of stimulus and pursuing another. There are various familiar facts which mark the transition from such simple preference which is not choice to voluntary choice in man. In the animal body with nervous 'mechanism' it is now well established that in order to the performance of certain actions, not only are the appropriate muscles innervated, but it is part and parcel of the action that the antagonist muscles are inhibited. It is but a step from this to the total disregard of the alternative stimulus. Between the two we have the above-noted isolated persistence of the alternative

when the choice has been made, and the preparatory condition of irresolution of which Buridanus' ass is the standing illustration.

There is nothing in free mental action which is incompatible with thorough determinism. Neither is such determinism incompatible with novelty. Novelty may however be understood in a less important and in a more important sense. It may be understood merely as a protest against the notion of bare repetition; or it may be understood as implying the impossibility of prediction.

Freedom  
and pre-  
diction.

Let us take the former sense first. Every mental action, and more specifically every act of willing, is unique. Novelty W. James<sup>1</sup> describes as "a character of fresh activity-situations." But such uniqueness they share with every other individual in the universe. No mere combination of universals explains individuality; things or events have their own special and particularising features, even if no more than their place and date. Novelty in this sense is not distinctive of human action. But the novelty alleged to be distinctive of free-will means more than this. It turns on the belief that

<sup>1</sup> "As a matter of plain history," writes W. James (*Radical Empiricism*, p. 185, note), defending himself against the charge of invoking free-will as a supernatural agent, "the only free-will I have ever thought of defending is the character of novelty in fresh activity-situations. If an activity-process is the form of a whole 'field of consciousness,' and if each field of consciousness is not only in its totality unique (as is now commonly admitted) but has its elements unique (since in that situation they are all dyed in the total) then novelty is perpetually entering the world, and what happens there is no pure *repetition*, as the dogma of the literal uniformity of nature requires. Activity-situations come, in short, each with an original touch." This contradicts nothing in what has here been said. Exception might indeed be taken to the statement that activity-consciousness implies a whole field of consciousness, as being unduly restrictive; but more particularly to the notion that the elements of a total field are unique because they are dyed in the total. They may receive a new value from entry into an organic whole (to borrow an expression from Mr. Moore), but the new character which they thus receive does not necessarily alter their intrinsic nature. Interpenetration, if so understood, would make a colour red different in itself because it may mean blood, or a point defined as the intersection of two straight lines different in itself because it is also a focus of an ellipse. But apart from these objections, every act is so far unique.



human action is not wholly predictable. An examination of this belief will show both that within limits it is well founded and why; and secondly that unpredictability is not limited to human determinism.

Undoubtedly human action is partially predictable. The intercourse of men with one another implies it and is based upon it. We resent equally (as Mr. Bradley has said) that our action cannot partly be predicted and that it can wholly be predicted; for instance, if a person tells us he could not be sure that we should speak the truth, or if he tells us he knew precisely what we should do. Our resentment in the second case is in practice a protest against encroachment on our privacy, and it has its good theoretical justification. For I myself am a thing enjoyed, which I myself do not contemplate, and still less a stranger. Still it is true that my mind is, after all, also bodily; and the more another knows of me, mind and body, the better can he forecast my action. A skilled observer, knowing a person's general bodily constitution, the latent tendencies in his bodily 'make-up,' might, apart from the difficulty of the calculation, which is supposed to be negligible, go far towards predicting a revolution in his character under certain circumstances. But the observer could only do so on the basis of present knowledge of human tendencies, combined with tendencies suggested by the bodily condition. He could not foretell something outside of the range of past experience; though of course after the event had happened he could see the connection of the strange event with its conditions, which would then be seen to have determined it.

This brings us within sight of the deeper justification for the belief that human action cannot wholly be predicted. Human nature is a growing thing, and with the lapse of real Time may throw up new characters which can only be known to him who experiences them. It may be possible to predict, if not from the knowledge we have of minds, at any rate from the knowledge we have of the underlying neural processes, what combination of ideas may possess a man at some future date. But the meaning of the ideas, the spirit of them, the objects

to which they refer, may be beyond our calculation. It is not, however, so important to recognise this possibility as to determine the limits of prediction, and discover where prediction becomes impossible.

Let me illustrate by cases. First let us take Hume's famous assertion of how imagination may in rare cases be aware of its object without actual impression. We may imagine, he thinks, a shade of grey between two given shades, without previous experience. The alleged fact is gravely open to doubt. To think of an intermediate shade is to be aware of a shade thought of as intermediate—a problem to be solved. We should not know what that which is described as an intermediate shade would look like. As a matter of fact, we should solve the problem by taking a brush and mixing our colours in the intermediate proportions and then we should see that this was what we sought. And this is, in general, the method on which we proceed in order to find what is the object of which the conditions, but not the object itself, are given in our thought. We only discover by getting the experience. I am not denying that possibly the precise neural process may occur from internal causes to which the shade in question corresponds as object, and that consequently without having actually seen the shade in the outer world a man may conceivably see it in fancy. I only deny that he would imagine it by thinking of it as the intermediate shade; and if he imagined it accidentally he would only recognise it as being the shade he sought in the same way as if he had mixed the pigments. If this is true of the subject himself, still more is it true for the outsider who observes him and predicts. Even if the subject could by a chance anticipate in fancy in the way described an experience not yet impressed from without, the outsider could not tell what it would be, unless he were identical with the subject. To take another example, how could the outsider predict, without previous knowledge of the experiment, that blue exposed to one eye and red to the other would give me purple. He might know the two nervous processes excited in the two halves of the brain. If they are not entirely distinct,

The limits  
of predic-  
tion.

if there is any co-operation between them, any "synergy," he might conceivably calculate their resultant process. Yet he would not know that this resultant process meant for the subject the consciousness of purple, unless he knew it already, which is supposed not to be the case.

In such cases prediction seems impossible, because it is new mental meanings, new objects, which are in question. The same thing is true of practical action. For minds by their action project new combinations and are creative: they bring new things into the world. Thus to an observer in France in the eighteenth century it might have been plain that some revolution and reconstruction was inevitable. He might with sufficient knowledge have calculated beforehand the movements in mechanical, or even physiological, terms of all the actors. But he could not predict that these movements meant for the actors the new idea of democratic freedom. He would only predict its appearance in forms of movement or at most of life. A third instance will show where it begins to be arguable that in such cases prediction really is possible. Might not the observer from previous knowledge calculate that at such and such a moment an idea would enter a Prime Minister's mind of optional and temporary exclusion of the counties of Ulster from the Irish Parliament; that his mind should work in a way which corresponded to this arrangement outside him? It may be so. But only, I imagine, if it is true that this arrangement means nothing more than rearrangement among familiar things, and so long as this proposed arrangement introduces nothing specifically new, no new creation of the human spirit, in political life.

Thus while the limits of unpredictability are very difficult to fix, it would seem that in certain cases prediction is impossible, even on the supposition of the vastest powers of calculation. In other cases prediction is possible theoretically, though impossible practically because of the coarseness of the calculating instrument. Even then it must be understood that calculation can only succeed so far as the data are exact and individual. This however applies to physical as well as to human concerns.

Determinism in mind is therefore not incompatible with unpredictability; and we have seen the reason, that the predictor is a mind, and while he may predict human future regarded as a contemplated object, that is in physiological terms, he cannot predict it wholly in mental terms. Now this fact is not peculiar to human determinism; but it arises wherever the change from one level of existence with its distinctive quality to another occurs; or in other words wherever the distinction of enjoyment and contemplation, in the extended sense, arises.

A being who knew only mechanical and chemical action could not predict life; he must wait till life emerged with the course of Time. A being who knew only life could not predict mind, though he might predict that combination of vital actions which has mind. But the limits of prediction are still narrower. In general, let A be a lower level and B the next higher level. A being on the level A could not predict B. A being on the level B could possibly predict the whole future in terms of A and lower levels, but not in terms of B, *e.g.*, if he lived at the beginning of life, he could not predict the forms of life, except possibly in terms of physico-chemical action. I use the word possibly in order to point out a qualification. For not only are there differences of level in existence, but within any level of existence, *e.g.*, animal life, there are differences, like those of animal species, emerging in the course of Time, which may approximate to differences of quality, like those that occur in the growth of humanity of which I have given an example from the French Revolution. Now it is an open question whether such differences on the level A could be predicted by a creature on the level B. For instance could an angel or God foretell all the new creations of human advance? It may be not; though on the other hand the cyclical recurrence of groups of physical properties even among the elements might indicate that there is some calculable order of forms of existence. Be this as it may, about one stage of existence no question seems to arise: the lowest of all, changes in space and time. In terms of Space and Time

the future can be predicted for a being on any stage higher, sufficient calculating capacity being presumed.

The calculator of Laplace.

The famous puzzle of the Laplacean calculator is full of confusions but contains a truth. A person who knows the whole state of the universe at any moment can calculate, so it urges, the whole future. Now it is true, I understand, that, given the condition of the universe at a certain number of instants in terms of Space and Time, the whole future can be calculated in terms of Space and Time. But what it will be like, what qualities it shall have more than spatial and temporal ones, he cannot know unless he knows already, or until he lives to see. He will be able to say that this morning certain vibrations at a rate of so many billions a second will impinge upon a certain group of motions of a highly complicated character, but unless he knows what green is and what life and mind are, he will not be able to say that *I* shall this morning see the *green* of my garden. How much of the future he will be able to predict depends on the time at which his calculation begins, that is, on the state which the universe has then attained in the unfolding of its characters. Certainly, if he is only present during the nebular period, he will never predict you and me, though he may predict the groups of changes in Space and Time which go by the names of you and me. Suppose he begins when human minds exist, he cannot, as we have seen, predict their future completely, because he only enjoys mind; and it is an open question whether he may foretell all possible developments at lower levels. Except in the limited sense described, the hypothesis of the calculator is absurd. He is supposed to be predicting as a man, though with more than human skill. Yet, if he exists at a stage earlier than the arrival of mind, he is an impossibility and, anyhow, he has not the materials for complete prediction except to the extent indicated. If he exists at the human stage, he is supposed to be contemplating human development instead of being involved in it himself, and the one thing which for that reason he cannot do is to foretell completely the future of man and still less of stages higher than mind. He stands, in fact, for little more than the proposition that at any

moment of the world's existence the future of the world "will be what it will be."<sup>1</sup> But what it will be he cannot foretell, for the world itself is in Time and is in perpetual growth, producing fresh combinations.

Either, then, the infinitely calculating mind of the hypothesis is unable to predict, or it is supposed by a *petitio principii* to know more than it really knows, and prediction is unnecessary. In the end it assumes Time to be unreal, or, what is the same thing, that the universe is completed: that, in Mr. Bergson's phrase, *tout est donné*. Nor is it of the least help to identify the supposed infinite mind with God. For whatever deity may be it is not merely infinite mind, if that phrase has any meaning, but something higher. The only meaning which can rationally be attached to the notion that God can predict the whole future is that the future will be what it will be. And there is one part of the universe which in any case even God cannot predict, and that is his own future.<sup>2</sup>

Determinism and prediction are therefore distinct ideas, and determinism is compatible with unpredictability, and freedom with predictability.

Not only may mental action be determined and yet unpredictable, it may be free and yet necessary. Necessity conflicts with freedom only if it is taken as equivalent to compulsion which removes the conditions of freedom or makes choice impossible. An external compulsion like a physical force may put the will out of action, or like imminent death it may under certain circumstances unman a person and reduce him to the condition of a brute. But the necessity which the will obeys is the 'necessity' of causation, the determinate sequence of event upon its conditions. Nor need we perplex our minds with the puzzles of fatalism. If our acts can be predicted, it is

Freedom  
and  
necessity.

<sup>1</sup> Mr. Russell's phrase in the paper, 'On the notion of cause,' *Proc. Arist. Soc.* N.S. xiii., 1912-13, p. 22. (Also in *Mysticism and Logic*.)

<sup>2</sup> Some of these remarks about the calculator, and on the general subject of this section are in agreement with what is said by Mr. Bosanquet (*Individuality and Value*, Lect. iii. pp. 107-17). See also J. S. Mackenzie, *Constructive Philosophy* (London, 1917), p. 375.

said, we cannot be free. Yet the only way in which we can predict human action, so far as it can be predicted at all, is to assume it to be free, and aware of its freedom. To disown the responsibility of choosing rightly because our future is determined is to suppose it to be determined by something which is not ourselves.

Freedom  
not indeter-  
mination.

It follows that freedom does not mean indetermination. When indetermination is used to mean that free action cannot practically be predicted or in certain cases cannot even be predicted theoretically, in both these senses human action is indeterminate or novel, but in both these senses indetermination is true of the non-mental world as well. It is certain that to predict the individuality of every physical event exceeds the practical resources of science. And for the same reason as we ourselves are beyond certain limits totally unpredictable by ourselves, events in nature are at their own level equally unpredictable. If indetermination means novelty, it is not distinctive of freedom and cannot be used as a criterion of freedom.

On the other hand if indetermination means contingency, that, in spite of its antecedents, the free act might have been different, the criterion is false. As there is no 'must' for science or philosophy, neither is there a 'might' or 'might not be'; science has to deal with what is. 'Might be' for it means not variation from what it finds, but variation within limits where not all the conditions are known. The determinism of the free act means no more than this, that it has followed in fact from its antecedents, as they exist in the character of the agent and the circumstances which appeal to him for action. The freedom consists in the act of choice; there is no power of choosing behind the choice itself, no freedom of choice but only freedom experienced *in* choice. Had the character and other antecedents been different, the act would have been different. Too often this criterion of indetermination is merely misreading the consciousness which we may have, not that the act might have been different but that it should or ought to have been different. It is not the criterion of freedom, but the state-

ment of the difference between positive and negative freedom. I have done wrong; had I been good or truly free, I should have done otherwise. Or perhaps I have done right, but I am conscious that if I had not been truly free, I should still have been free, as acting from my own character which was not truly good. Remorse is the awakening of my true character which had been partially lulled into oblivion, or the growth of a more perfect character after the act which the new character condemns.

We may enumerate one or two more of the criteria by which freedom has been mistakenly distinguished. Freedom does not mean action which proceeds from the whole personality, though that is true of the completest freedom. The physical body, which for us is not free, thrills also to its depths at the touch of circumstance. Freedom does not mean ignorance of the real causes of action. On the contrary it means awareness of them. We are most fully conscious of freedom when we are most aware of our acts proceeding from ourselves. It does not mean purpose, if only because actions may be attended by consciousness of freedom which are not purposed. Freedom of the will always involves purpose, but purpose, though essential to the willing, is not essential to its freedom, that is, does not define its freedom. Purpose is the idea of an end which precedes the action. But this idea (I mean the ideation of it) is itself determined by antecedents and in turn it determines action. Willing is eminently free because throughout its stages we have the awareness of enjoyment determined by enjoyment. But that the determining enjoyment is the anticipation of the determined one is indeed vital to the will but not to its freedom.

Other  
mistaken  
criteria.

Finally it implies no contrast of any intelligible character of human nature with its sensible character, such as Kant regarded as necessary to account for obligation. Human nature is wholly empirical, and obligation arises within its empirical limits. The consciousness of obligation is the consciousness we have that right action is the judgment of the standard mind; that it is what the



standard or collective mind wills. The sense of guilt is the sense that our will is inconformable thereto. These distinctions grow up within the collective of persons, or within the individual as he represents in his own person that collective. That acts of a certain sort are typical is a fact not confined to human nature but common to it with at least all organic forms. We possess but the reflective consciousness of it. Nothing but an empirical existence is needed for these facts; and indeed I do not know how the mind should ever have been regarded as anything else than purely empirical, were it not that it is supposed to contemplate itself, which in fact it never does.

Univer-  
sality of  
freedom.

Freedom, then, is determination in enjoyment, and we have seen that it involves no feature save enjoyment which distinguishes it from natural or physical action, which is contemplated. Not all human action is free. When it is unfree its determinants are not present in enjoyment. But when free action in turn becomes the object of contemplation it falls into the class of determined natural action. At the same time the angel or God who sees our action as determined may know also that for us it is enjoyment and free, though he cannot enjoy our freedom but only knows<sup>1</sup> that we feel it. Let us extend the usage of enjoyment and contemplation, and we shall then see that each contemplated thing enjoys its own peculiar level of existence while it contemplates the levels below it. Hence the action of the plant which for us is natural determination is for the plant itself the enjoyment of its freedom. The stone which for us is compelled from our point of view is free in its internal actions for itself. It acts, in the Spinozistic phrase, from the necessity of its own nature. It is only to the higher level of creatures that free determinism or enjoyment in determination becomes mere determinism. Thus freedom in general is the experience which each thing has of the working of its own nature; and a distinction parallel to ours of freedom and unfreedom exists for the plant and for the stone or the atom. The plant undergoes the wind which bends it, or the air which sets its respiration at work. But it enjoys

its own free act of respiration. The stone is passive to the freezing water that splits it, but free in its resilience to deformation. Physicists are now occupied with the free actions of the atom.

Thus freedom is not an exceptional privilege of human life, but as enjoyed determination is, as Wordsworth said of pleasure, "spread through the world."<sup>1</sup>

With freedom we have completed the survey of those characters of mind which appear at first to make mind unique among things. In each case we have been able to verify the proposition that the distinctive features of mind belong to it in virtue of its character as a conscious being, not in virtue of anything which separates it from other finites. All finites according to their level of existence possess the character distinctive of that level, but all of them alike stand in relations to one another which they derive ultimately from being spatio-temporal complexes which are contained within the one Space-Time. Knowing, the distinction of things and appearances, freedom, even values, are characters which have their analogues at lower levels of existence, and are but particular instances of general characters of all things, as those general characters are modified in the case of a finite which is conscious. To know an object is but an instance of universal compresence of finites with one another, and hence we were led to extend the contrast of enjoyment and contemplation to every case in which a finite of one level was compresent with one of a lower level, or with a feature of another finite which belongs to a lower level. The contrast of the whole of a thing with its partial characters obtains throughout the relations of finites with one another, and is not confined to the relations between mind and other things. The universality of freedom has been the subject of this chapter. Only in the case of value was the conclusion imperfect, because of our inadequate knowledge of the history of material things. Thus, with allowance

Summary  
of the  
Empirical  
Problems.

<sup>1</sup> The larger part of the preceding pages of this chapter is taken from an article on 'Freedom' in *Proc. Arist. Soc.* N.S. vol. xiv., 1913-14.

made for this imperfect conclusion, we have found that our familiar ways of regarding ourselves in relation to other things are the forms which relations of a simpler or more universal character assume in the case of the highest of known finites.

The method has been, not the more difficult one of attempting to show from the general character of finites that certain relations obtain between them which in human minds assume these forms, but, starting with the ways of mind, to express them in terms of a more general character. We have thus sought to verify the fundamental hypothesis, that all finites are differentiations from the same matrix. In every finite there is one element corresponding to body in ourselves and another corresponding to mind. The business of metaphysics was upon each level of existence to identify the different forms which these two elements assume, and in particular to indicate what in each case was the element which played the part of mind. On the lowest level, which has purely spatio-temporal character, the mind was Time itself. Hence we ourselves are built on a universal pattern of which Space-Time itself or any of its purely spatio-temporal differentiations is the simplest exemplar. As we pass from one level to the next higher, we find that a portion of an existent on that level is set aside to be the bearer of a new characteristic empirical quality which is distinctive of the next level, and between that specialised body of the lower and the characteristic of the higher level there is identity in the same sense as a mental process is identical with its equivalent neural process. The orders of the finites being thus described, we find that they enter into various relations with one another in consequence of their all being contained within the common matrix. These relations are those which we have examined at such length, and they arise out of the categorial characters of these empirically distinguished orders of finites.

In this way, mind is discovered not to stand apart from other things in some kind of isolation, nor to impress upon things its own mental character. The fundamental features which mind shares with other things and the

relations into which it enters with other things are the witnesses that minds and things which are not minds share in the consequences of their common origin. The affinity which exists between them is that which links together all creatures, minds and material things alike, as all alike children, in various degrees of perfection of growth, of the one parent. Time which inspires Space and makes it a continuum of motions, when it reaches in man the form of mind, inspires knowing and freedom and value. In a poem which he calls 'Meditation under Stars,' Meredith has described this affinity between us and the stars, and how in the view of it our earth acquires a meaning which it has not otherwise. "The fire is in them whereof we are born; the music of their motion may be ours."<sup>1</sup>

The picture we have then before us is that which was sketched hypothetically at the beginning of this Book. In the course of Time which is the principle of movement the matrix of Space-Time breaks up into finites of ever increasing complexity. At certain points in the history of things finites assume new empirical qualities which are distinctive of levels of existence, primary qualities, matter, secondary qualities, life, mind. The distinctive quality of the finite at its level is the 'mind' of that finite. The highest of these empirical qualities is mind or con-

<sup>1</sup> I quote the passage in full. We have to allow for his depreciation of Space and of Time.

So may we read and little find them cold:  
Not frosty lamps illumining dead space,  
Not distant aliens, not senseless Powers.  
The fire is in them whereof we are born;  
The music of their motion may be ours.  
Spirit shall deem them beckoning Earth and voiced  
Sisterly to her, in her beams rejoiced.  
Of love, the grand impulsion, we behold  
The love that lends her grace  
Among the starry fold.  
Then at new flood of customary morn,  
Look at her through her showers,  
Her mists, her streaming gold,  
A wonder edges the familiar face:  
She wears no more that robe of printed hours;  
Half strange seems Earth, and sweeter than her flowers.  
*Poems, vol. ii. p. 171, ed. 1907.*

sciousness. But the lower finites are not minds in the strict sense but only in an extended and metaphorical sense. There are no degrees or kinds of consciousness lower than consciousness itself, as Leibniz thought, but different grades of reality each with an element which is not mind but corresponds to mind in its office. Not even the universe of Space-Time has mind; but in so far as it has Time, it is parallel, with the qualifications noticed before, with the empirical finite which is both mind and body in one. The only mind in the universe is those finites which are conscious. There are consequently minds in the universe but no mind in general. The notion of a mind as such which pervades things is a fiction generated by the illegitimate extension of an empirical finite thing mind. Infinite mind is unknown to us; infinite Time is known to us. If there is an infinite something which is more than Time, it is more than mind.

#### SUPPLEMENTARY NOTE

HAVE ALL THE FORMS OF EXISTENCE EXISTED ALWAYS?

A DIFFICULTY remains which might be felt, and which if it were well founded would mar the clearness of the picture; but it rests on a misapprehension and may be dealt with in a note. All the forms of finite existence, from primary shapes in Space-Time down to mind, are born in Time. But since Time is infinite, it might seem that every form of existence must have existed in the past. Every form of motion must have been tried, and therefore in the strictest sense the universe is not an evolution at all, but the whole of its varied riches exists already, no matter at what point in the history we are imagined to stop. This objection recalls the notion of Leibniz that each portion of matter contains the whole universe of forms, and perhaps at bottom it involves the same notion of representation of the universe by each finite as his. For us the idea of representation of the universe has no place. Each finite does indeed stand in relation to the whole universe, because it is a portion of Space-Time. But it does not represent the universe, any more than our minds which are related to their objects, and related correspondingly so that to each object there corresponds a distinct mental process, represent these objects

so as in any sense to resemble them or contain them. The mind is a mode of being of its own, distinct from that kind of being which the objects possess; and in like manner every finite has a mode of being of its own distinct from the rest of the universe to which it stands in relation. The parts do not reflect the whole but are parts of it. But we may leave this possible motive of the objection, and trace it to its real source in its misapprehension of the infinity of Time.

It misunderstands in the first place the notion of infinity. Because an infinite time has elapsed down to and including the origin of man, we may not therefore conclude that man must have existed before. It is true that there are as many instants in the time which elapses down to a given event as in the time which elapses down to an hour before that event. But this does not mean that every event in the longer time has occurred earlier. The infinite series of numbers from the number 3 onwards does not include the numbers 1 and 2, though there are as many numbers in the one series as the other. Or to take a case which is more strictly parallel, the infinite series of negative numbers which ends at  $-1$  does not include the numbers 0 and 1. The very definition of an infinite collection is that its image or representation is only a part of the original, though in the derived infinite there is an exact correspondence with the original. Thus though there is an exact correspondence between the number of instants in an hour and a minute, the hour is still longer than the minute.

In the next place the objection neglects the distinctive character of Time which is to be a succession within duration; it conceives of Time as given all at once as if it were a line. In other words it conceives of Time as if it were precisely the same as Space. But Time in the abstract is distinct from Space in the abstract. The one is in the abstract mere coexistence; the other mere succession. Since the instants of abstract Time are homogeneous, the conclusion is drawn that in an infinite Time everything which can happen has happened. But this overlooks what is essential to Time, that it is creative: that something comes into being which before was not.

Just because Time is taken in the abstract it is treated as if it were given at once, as if there could be at any one moment a completion of what is essentially successive, and therefore cannot be at once. But the deeper cause of the misunderstanding is that Time, as we have more than once seen to be the case in philosophical discussions, is taken apart from Space. There is no such thing as a Time which subsists alongside of Space. There is only one reality which is Space-Time. When we separate Time from Space, Space becomes purely geometrical. In such a Space all the

spatial patterns of finite existents are already contained. But a finite existent is not a merely spatial pattern but a spatio-temporal one, a configuration of motion. Thus we cannot say that because the spatial pattern of man exists in Space at any moment therefore man also exists at any moment. We are dealing with patterns as traced out in time. But to arrive at a higher or more complex order of finite existent *takes time*. Time is taken in the abstract, separated from Space, and accordingly things in the real stuff of Space-Time are emancipated from the history of their becoming. But when we think of things as generated in time out of the fundamental stuff, they have all of them a history. The time which has elapsed down to man is infinite, but it is an infinity which has been occupied with the generation of certain forms, and will be occupied with the generation of other forms. Though Time is infinite, experience as registered in historical records tells us that in times before the birth of man there was no man. That pattern had not yet been traced which is the condition of the emergence of human mind.

The same reality of Time which has evolved the various forms of finite existence leaves room for still higher births. Except for the belief that development is finished with the highest thing we know, there is no ground for the doctrine of cyclical periods of the world's history, a cataclysm followed by a fresh beginning, such as are supposed by many philosophies, from Heraclitus and Zarathustra and the Stoics down to Nietzsche. On the contrary the notion of a fresh beginning vaguely assumes the finitude of Time, which in reality has no beginning or begins at each moment indifferently. Real Time hints, by analogy with the past, the movement towards higher empirical qualities of existence. On this is founded the possibility of understanding deity.

## BOOK IV

## DEITY



## CHAPTER I

### DEITY AND GOD

IN a universe so described, consisting of things which have developed within the one matrix of Space-Time; we ourselves being but the highest finite existences known to us because the empirical quality which is distinctive of conscious beings is based on finites of a lower empirical quality; what room is there for, and what place can be assigned to, God?

Primarily God must be defined as the object of the religious emotion or of worship. He is correlative to that emotion or sentiment, as food is correlative to appetite. What we worship, that is God. This is the practical or religious approach to God. But it is insufficient for our theoretical needs. It labours under the defect that so far as religion itself is able to assure us, the object of religion, however vitally rooted in human nature, however responsive to its needs, may be disconnected with the rest of the world. God may be but an ennobling fancy, a being whom we project before us in our imagination, in whom to believe may sustain and inspire us and have its own sufficient justification in its effects on our happiness, but to whom no reality corresponds which can be co-ordinated with familiar realities of the world. The appetite for food arises from internal causes, but the food which satisfies it is external and independent of the organism, and it is known to us apart from the satisfaction which it gives to our hunger. The passion for God is no less a real appetite of our nature,

Two  
ways of  
defining  
God.

but what if it creates the very object which satisfies it? Always, indeed, the religious emotion believes in the reality of its object, as something greater than man and independent of him, in whom the finite creature may even in some phases of feeling be submerged; and it would reject as preposterous the suggestion that God may be a fancy with which it plays, like a lover with a dream of perfection. But the religious sentiment itself can supply us with no such theoretical assurance of reality, and it needs to be supplemented with a metaphysical inquiry, what place if any the object of worship occupies in the general scheme of things.

On the other hand from the metaphysical approach, God must be defined as the being, if any, which possesses deity or the divine quality; or, if there are more Gods than one, the beings which possess deity. The defect of this definition (which is only apparently circular) is that the being which possesses deity need not necessarily, so far as the bare metaphysical description goes, be the object of religious sentiment. It has to be shown that the being which possesses deity coincides with the object of religious passion and is its food. Neither definition is therefore for theory complete in itself. The religious description wants authentic coherence with the system of things. The metaphysical one wants the touch of feeling which brings it within the circle of human interests. Were the passion towards God not already lit, no speculative contemplation or proof of the existence or attributes of a metaphysical God would make him worshipful.<sup>1</sup> Even the intellectual love of God which in Spinoza's system has the force of religion can do so, not as a mere passion for truth in its fullest form, but because it presupposes a religious passion. Were it not on the other hand for the speculative or reflective justification, the God of religious sentiment would have no sure root in things. Religion leans on metaphysics for the justification of its indefeasible conviction of the reality of its object; philosophy leans on religion to justify it in calling the possessor of deity by the religious name of

<sup>1</sup> Cp. James, *Varieties of Religious Experience* (London, 1902), p. 431.

God. The two methods of approach are therefore complementary.

But whichever method of approach be adopted, in either case God is defined indirectly. Religion is not the sentiment which is directed upon God; but God is that upon which the religious sentiment is directed. The datum of experience is that sentiment, and what God is is known only by examining its deliverances. In metaphysics, deity is not so much the quality which belongs to God as God is the being which possesses deity. The quality of deity is here the datum of experience. It is idle to hope that by defining God in conceptual terms, whether as the sum of reality, or the perfect being, or the first cause, or by other device, we can establish the connection between such a being and the rest of our experience. We do but start with an abstraction and we do but end with one. Proofs of God's existence and nature there are none, if such a God is to be identified with the object of worship. Granted that there is a sum of reality; in what respect does it stir the religious passion? The answer must be: because of its deity, and on what this deity is the conception of a sum of reality offers no light. The same thing holds in different degrees of the conceptions of a first cause or a supreme designer.

Nor can we even prove the existence of a being called God, whether worshipful or not, except on the basis of experience. No one now is convinced by the traditional arguments for God's existence. The reason is that at some point or other they introduce conceptions which are *a priori* in the bad sense of that phrase, in which it means not something experienced which is pervasive of all things but something supplied by the mind; or in other words they desert the scientific interpretation of things, along the lines indicated by experience itself, by a rigidly limited use of analogy.<sup>1</sup>

<sup>1</sup> The famous ontological argument proves nothing more than that the totality of things is real; which is a bare tautology. The argument assumes the form that the idea of the universe cannot be a mere idea as

The only one of the three which at all persuades is the argument from design which is based on the wonderful adaptation of living forms to their surroundings and on "the hierarchy of ministration"<sup>1</sup> amongst the forms, by which the lower serves the purposes of the higher. Because such adaptation implies in human products the operation of a designing mind, the conception is extended from this particular case, by an illegitimate use of analogy, to experience as a whole. The easy conception of a designing mind was foisted upon nature as a whole, without considering whether it could be used under conditions which required it to be infinite and to create its own material.<sup>2</sup> Subsequent knowledge has shown that the experience which was thought unintelligible without such a conception points in the opposite direction. For adaptation to the surroundings, or the internal teleology of forms, is the result of selection operating on variations; and the external teleology of ministration is not to be assigned to a force operating in the past but is an incident of passage to the future. Who does not see that sheep were not created for man, but that man survives because he is able to live on sheep? On the other hand, if for this external designer we substitute the notion of an immanent design, we do but name the fact that the world works out so as to produce a plan. We may call the world so conceived by the name of God, and forget or possibly explain the wastefulness and

the idea of a finite thing may be, but its object must be real. In truth the idea of all reality is nothing but all reality over again. Mr. Bradley accepts the argument but adds the proviso that the idea of the Absolute though it must exist need not exist as such, that is in the form of the idea. But if I am thinking of all reality, if it really is all reality I think of, my idea can be nothing but that reality, and there can be no difference between my object and the reality. This corresponds to the assertion made on a previous page (Bk. I. ch. ii. vol. i. p. 76, note 1) that a complete perspective of Space-Time taken both from the place and date of any point-instant is nothing but the universe itself. In other words there can be no perspectives consisting of the whole of reality, and so in the strict sense there is no such thing as an idea of it. For all ideas are perspectives of the things they are ideas of.

<sup>1</sup> The phrase is St. George Mivart's.

<sup>2</sup> Difficulties raised by Spinoza and Kant.

destruction involved in the process. But in what sense is such a God worshipful? He is worshipful only if we silently reintroduce into the notion of an immanent design, which in the end is a bare compendious description of certain facts, that of a designer, and fall back on the previous and invalid view.

What we can hope to do is something more modest, and more consistent with scientific procedure in other matters. Abandoning the attempt to define God directly, we may ask ourselves whether there is place in the world for the quality of deity; we may then verify the reality of the being which possesses it, that is of the Deity or God; and having done so, we may then consult the religious consciousness to see whether this being coincides with the object of worship. Where then, if at all, is deity in the scheme of things?

Within the all-embracing stuff of Space-Time, the universe exhibits an emergence in Time of successive levels of finite existences, each with its characteristic empirical quality. The highest of these empirical qualities known to us is mind or consciousness. Deity is the next higher empirical quality to the highest we know; and, as shall presently be observed, at any level of existence there is a next higher empirical quality which stands towards the lower quality as deity stands towards mind. Let us for the moment neglect this wider implication and confine our attention to ourselves. There is an empirical quality which is to succeed the distinctive empirical quality of our level; and that new empirical quality is deity. If Time were as some have thought a mere form of sense or understanding under which the mind envisages things, this conception would be meaningless and impossible. But Time is an element in the stuff of which the universe and all its parts are made, and has no special relation to mind, which is but the last complexity of Time that is known to us in finite existence. Bare Time in our hypothesis, whose verification has been in progress through each stage of the two preceding Books and will be completed by the conception

Deity the  
next higher  
empirical  
quality  
than mind.

of God,—bare Time is the soul of its Space, or performs towards it the office of soul to its equivalent body or brain ; and this elementary mind which is Time becomes in the course of time so complicated and refined in its internal grouping that there arise finite beings whose soul is materiality, or colour, or life, or in the end what is familiar as mind. Now since Time is the principle of growth and Time is infinite, the internal development of the world, which before was described in its simplest terms as the redistribution of moments of Time among points of Space, cannot be regarded as ceasing with the emergence of those finite configurations of space-time which carry the empirical quality of mind. We have to think upon the lines already traced by experience of the emergence of higher qualities, also empirical. There is a *nisus* in Space-Time which, as it has borne its creatures forward through matter and life to mind, will bear them forward to some higher level of existence. There is nothing in mind which requires us to stop and say this is the highest empirical quality which Time can produce from now throughout the infinite Time to come. It is only the last empirical quality which we who are minds happen to know. Time itself compels us to think of a later birth of Time. For this reason it was legitimate for us to follow up the series of empirical qualities and imagine finite beings which we called angels, who would enjoy their own angelic being but would contemplate minds as minds themselves cannot do, in the same way as mind contemplates life and lower levels of existence. This device was adopted half-playfully as a pictorial embodiment of the conception forced upon us by the fact that there is this series of levels of existence. It was used illustratively to point the distinction of enjoyment and contemplation. But we now can see that it is a serious conception. For the angelic quality the possession of which enables such beings to contemplate minds is this next higher empirical quality of deity and our supposed angels are finite beings with this quality. We shall have to ask how such finite deities are related to the infinite God, for they themselves are finite gods.

Deity is thus the next higher empirical quality to mind, which the universe is engaged in bringing to birth. That the universe is pregnant with such a quality we are speculatively assured. What that quality is we cannot know ; for we can neither enjoy nor still less contemplate it. Our human altars still are raised to the unknown God. If we could know what deity is, how it feels to be divine, we should first have to have become as gods. What we know of it is but its relation to the other empirical qualities which precede it in time. Its nature we cannot penetrate. We can represent it to ourselves only by analogy. It is fitly described in this analogical manner as the colour of the universe. For colour, we have seen, is a new quality which emerges in material things in attendance on motions of a certain sort. Deity in its turn is a quality which attends upon, or more strictly is equivalent to, previous or lower existences of the order of mind which itself rests on a still lower basis of qualities, and emerges when certain complexities and refinements of arrangement have been reached. Once more I am leaning for help upon Meredith, in whose *Hymn to Colour*, colour takes for a moment the place of what elsewhere he calls Earth : a soul of things which is their last perfection ; whose relation to our soul is that of bridegroom to bride. He figures the relation of our soul to colour under the metaphor of love ; but as I read the poem, deity as the next higher empirical quality is not different from colour as he conceives it ; save only that for him the spirit of the world is timeless, whereas for us deity is like all other empirical qualities a birth of Time and exists in Time, and timelessness is for us a nonentity, and merely a device for contrasting God's infinite deity with the relative imperfection of the finite things we know, a conception which shall appear in due course.

We have not yet asked what the being is which possesses deity. But before attempting to raise the question we may still linger over the quality of deity itself. In the first place it is clear that, while for us

Extension  
of the  
conception  
of deity.



men deity is the next higher empirical quality to mind, the description of deity is perfectly general. For any level of existence, deity is the next higher empirical quality. It is therefore a variable quality, and as the world grows in time, deity changes with it. On each level a new quality looms ahead, awfully, which plays to it the part of deity. For us who live upon the level of mind deity is, we can but say, deity. To creatures upon the level of life, deity is still the quality in front, but to us who come later this quality has been revealed as mind. For creatures who possessed only the primary qualities,—mere empirical configurations of space-time,—deity was what afterwards appeared as materiality, and their God was matter, for I am supposing that there is no level of existence nearer to the spatio-temporal than matter. On each level of finite creatures deity is for them some 'unknown' (though not 'unexperienced') quality in front, the real nature of which is enjoyed by the creatures of the next level. I do not mean that a material being would in some way think or forecast life; for there is no thinking in the proper sense till we reach mind. I do not even mean that matter forecasts deity in the sense in which it is sometimes said that to a dog his master is God. For the dog though he may not think, does feel and imagine, and his master is a finite being presented to his senses, for whom he feels attachment. I mean only that corresponding to the sense of a mysterious something which is more than we are and yet is felt in feeling and is conceived by speculation, there is some quality in the purview of material things which lies ahead of material quality. If we think ourselves back into material existence, we should feel ourselves, though matter would be the highest that we know, still swept on in the movement of Time. A merely material universe would not be exhausted by materiality and its lower empirical qualities; there would still be that restless movement of Time, which is not the mere turning of a squirrel in its cage, but the *nisus* towards a higher birth. That it is so, events show. How its being so would be 'experienced' in the

material 'soul' may need for its description a greater capacity to strip off human privileges and sympathise with lower experience than most persons, and certainly I, possess.

Having thus realised that the relation of deity to mind is not peculiar to us but arises at each level between the next higher quality and the distinctive quality of that level, we can at once pass to another observation. We cannot tell what is the nature of deity, of our deity, but we can be certain that it is not mind, or if we use the term spirit as equivalent to mind or any quality of the order of mind, deity is not spirit, but something different from it in kind. God, the being which possesses deity, must be *also* spirit, for according to analogy, deity presupposes spirit, just as spirit or mind presupposes in its possessor life, and life physico-chemical material processes. But though God must be spiritual in the same way as he must be living and material and spatio-temporal, his deity is not spirit. To think so would be like thinking that mind is purely life, or life purely physico-chemical. The neural complexity which is equivalent to mind is not merely physiological, but a selected physiological constellation which is the bearer of mind, though it is also physiological, because it has physiological relations to what is purely physiological. That complexity and refinement of spirit which is equivalent to deity is something new, and while it is also spirit it is not merely spirit. Deity is therefore, according to the pattern of the growth of things in time, not a mere enlargement of mind or spirit, but something which mere spirit subserves, and to which accordingly the conception of spirit as such is totally inadequate. Spirit, personality, mind, all these human or mental characters belong to God but not to his deity. They belong as we must hold not to his deity but to his 'body.' Yet since it is through spirit that we become aware of God, whether in the practical shape of the object of religious feeling or philosophically as the possessor of deity, since what is beyond spirit is realised through spirit, and since more

Deity not  
spirit.

particularly spirit is the highest quality whose nature we know, and we are compelled to embody our conceptions in imaginative shapes, it is not strange that we should represent God in human terms. Instead of the shadowy quality of which we can only say that it is a higher quality than mind, God is made vivid to us as a greater spirit; and we conceal the difference in kind of the divine and the human nature under magnified representations of human attributes. These are the inevitable devices of our weakness and our pictorial craving. But, for philosophy, God's deity is not different from spirit in degree but in kind, as a novelty in the series of empirical qualities.

Theories of  
God as a  
spirit.

When on a former occasion I endeavoured to explain the relation of the mind of total Space-Time to the minds of the separate point-instants, I referred (in a note<sup>1</sup>) to a hypothesis that had been advanced as to the nature of God, which was founded on the coexistence of a superior mind with an inferior one within the same abnormal body or personality. I made use of the notion of co-conscious minds not aware of each other, in order to elucidate certain features in Space-Time when Time is regarded as the mind of Space. This hypothesis in its reference to God I am compelled to reject and the reason will now be clear. The sequel will show that the position adopted here as to God is not dissimilar, at least to the extent that God is also for us, ideally speaking, an individual within the world. But it would be difficult on this hypothesis to admit an infinite God;<sup>2</sup> and what is more important it would commit us to making of God a being not higher in kind than minds.

<sup>1</sup> Bk. III. ch. ii. A, vol. ii. p. 43, note 1.

<sup>2</sup> For physiological bodies with minds are finite. An infinite mind would require for its body the whole universe (see later) and would not then be one mind subsisting along with others but inclusive of them all, and would thus come under the suggestion of the next paragraph. There may indeed be an infinite part of the universe, *e.g.* a line. But this would not be the bearer of mind. In other words either God's mind is really a mind and then it is finite; or if it is infinite, it must either be an all-inclusive mind (which is merely Time), or not mind at all but deity.

On the basis of the same data as were used in the above hypothesis, we might again be tempted to compare God with the total personality in which the separate personalities are merged when the hysteric patient is restored to health; and to conceive of God as a society of minds. There is, however, nothing to show that the minds of distinct bodies are actually connected together so as to constitute a single all-embracing mind. Where dissociated personalities within a single individual are reunited, their physiological connection is re-established. Between the separate minds supposed to be contained within the mind of God there is no such physiological connection. In its application to the supposed mind of God accordingly the reference to dissociated personalities fails of relevance.

Nor can we help ourselves to think of God as an inclusive mind by the current metaphors of the mind of a state or a crowd. Where many persons are grouped together in co-operation there is no real reason for imagining the whole society to possess a mind. It is sufficient that the persons communicate with one another, and that while on the one hand their gregarious instinct brings about their juxtaposition, their juxtaposition supplies thoughts and passions which are not experienced by the persons in isolation. The mind of a crowd is not a new single mind; the phrase represents the contagious influence upon an individual of the presence of many others. An incendiary oration addressed to one person might leave him cold, but in a meeting each catches infection from his neighbour (just as patients in a hospital will fall into a hypnotic sleep from sympathy with another patient who is receiving suggestion) and the oration may produce a riot. The individuals gather together to hear the orator and then their assemblage fans the flame. The institution of the family arises out of the mutual needs of persons and in turn evokes fresh ones. But there is no new mind of the family; only the minds of its members are affected by their participation in the family. In the same way there is no mind of the state or the nation which includes the minds of

its members. The state is not a new individual created by the union of isolated individuals. The individuals are driven by their own sociality into union, and the union alters their minds. It affects the individuals because it is in the first instance the issue of their instinctive gregariousness. The general will is not a new individual will which contains the individual wills; it is but the will of individuals as inspired by desire for the collective good. T. H. Green seems to me to have been right in insisting that a nation or a national spirit is as much an abstraction unless it exists in persons as the individual is an abstraction apart from the nation.<sup>1</sup> It is true that a state or nation has features not recognisable in any one individual; but this is only to say that groupings of persons are not merely personal.

In a later page I shall return to this matter when I attempt to show the bearing of the doctrine that God's distinctive character is not mind or spirit but something new, or deity, upon the current theory that the Absolute in which all finites are merged is spirit.

God as  
universe  
possessing  
deity.

In the religious emotion we have the direct experience of something higher than ourselves which we call God, which is not presented through the ways of sense but through this emotion. The emotion is our going out or endeavour or striving towards this object. Speculation enables us to say wherein the divine quality consists, and that it is an empirical quality the next in the series which the very nature of Time compels us to postulate, though we cannot tell what it is like. But besides assuring us of the place of the divine quality in the world, speculation has also to ask wherein this quality resides. What is the being which possesses deity? Our answer is to be a philosophical one; we are not concerned with the various forms which the conception of God has assumed in earlier or later religions. Ours is the modester (and let me add far less arduous) inquiry what conception of God is required if we think of the universe as Space-

<sup>1</sup> *Prolegomena to Ethics*, sect. 184; taken from the table of contents, p. xxi.

Time engendering within itself in the course of time the series of empirical qualities of which deity is the one next ahead of mind. God is the whole world as possessing the quality of deity. Of such a being the whole world is the 'body' and deity is the 'mind.' But this possessor of deity is not actual but ideal. As an actual existent, God is the infinite world with its nisus towards deity, or, to adapt a phrase of Leibniz, as big or in travail with deity.

Since Space-Time is already a whole and one, why, it may be urged, should we seek to go beyond it? Why not identify God with Space-Time? Now, no one could worship Space-Time. It may excite speculative or mathematical enthusiasm and fill our minds with intellectual admiration, but it lights no spark of religious emotion. Worship is not the response which Space-Time evokes in us, but intuition. Even Kant's starry heavens are material systems, and he added the moral law to them in describing the sources of our reverence. In one way this consideration is irrelevant; for if philosophy were forced to this conclusion that God is nothing but Space-Time, we should needs be content. But a philosophy which left one portion of human experience suspended without attachment to the world of truth is gravely open to suspicion; and its failure to make the religious emotion speculatively intelligible betrays a speculative weakness. For the religious emotion is one part of experience, and an empirical philosophy must include in one form or another the whole of experience. The speculative failure of the answer is patent. It neglects the development within Space-Time of the series of empirical qualities in their increasing grades of perfection. The universe, though it can be expressed without remainder in terms of Space and Time, is not merely spatio-temporal. It exhibits materiality and life and mind. It compels us to forecast the next empirical quality or deity. On the one hand we have the totality of the world, which in the end is spatio-temporal; on the other the quality of deity engendered, or rather being engendered, within that whole.

These two features are united in the conception of the whole world as expressing itself in the character of deity, and it is this and not bare Space-Time which for speculation is the ideal conception of God.

Belief in God, though an act of experience, is not an act of sight, for neither deity nor even the world as tending to deity is revealed to sense, but of speculative and religious faith. A word will be said later to compare the faith we have in God with the faith we have in the minds of other persons than ourselves. Any attempt, therefore, to conceive God in more definite manner must involve a large element of speculative or reflective imagination. Even the description of God as the whole universe, as possessing deity, or as in travail with deity, is full of figurative language. If we are to make our conception less abstract we must try to represent to ourselves some individual in whom deity is related to its basis in the lower levels of empirical quality as far down as the purely spatio-temporal; and a being of this kind is, as we shall see, rather an ideal of thought than something which can be realised in fact in the form of an individual. What we have to do is to be careful to conceive the ideal in conformity with the plan of what we know of things from experience.

Personification of this conception: (a) finite god.

The simplest way of doing so is to forget for a moment that God being the whole world possessing deity is infinite, and, transporting ourselves in thought to the next level of existence, that of deity, to imagine a finite being with that quality, a god of a polytheistic system, or what we have called an angel. We must conceive such a being on the analogy of ourselves. In us a living body has one portion of itself specialised and set apart to be the bearer of the quality of mind. That specialised constellation of living processes, endowed with the quality of mind, is the concrete thing called mind. The rest of the body in its physiological, material, and spatio-temporal characters, sustains the life of this mind-bearing portion, which in its turn is said in the physiological sense to represent the rest of the body,

because there is a general correspondence between the affections of the body and the excitements of the mind-bearing portion which are enjoyed as mental processes. In virtue of some of these mental enjoyments the mind contemplates the things outside its body, in virtue of others it contemplates its own bodily conditions in the form of organic *sensa* or *sensibles*, or of other *sensibles* of movement, touch, and the rest. In the superior finite which has deity, we must conceive the immediate basis of deity to be something of the nature of mind, just as the immediate basis of our mind is life, and the mind of the finite deity will rest on a substructure of life as with us. One part of the god's mind will be of such complexity and refinement as mind, as to be fitted to carry the new quality of deity. Thus whereas with us, a piece of Space-Time, a substance, which is alive, is differentiated in a part of its life so as to be mind, here a substance or piece of Space-Time which is mental is differentiated in a portion of its mental body so as to be divine, and this deity is sustained by all the space-time to which it belongs, with all those qualities lower than deity itself which belong to that substance. Moreover, as our mind represents and gathers up into itself its whole body, so does the finite god represent or gather up into its divine part its whole body, only in its body is included mind as well as the other characters of a body which has mind. Now for such a being, what for us are organic *sensibles* would include not merely the affections of its physiological body, but those of its mental 'body,' its mental affections. To speak more accurately, its mental affections, the acts of its mind-body, would take the place of our organic or motor *sensa*, while *sensa*, like hunger and thirst, which are the affections of its life-body, would fall rather into the class of *sensa* which with us are, like the feel and visual look of our bodies, contemplated by special senses. For such a being its specially differentiated mind takes the place of the brain or central nervous system with us. The body which is equivalent with the deity of the finite god, that is to say, whose processes are not parallel to but identical with the



'deisings' or enjoyments of the god, is of the nature of mind.

Only this proviso must be added. The mental structure of which a portion more complex and subtle is the bearer of deity, must not be thought necessarily to be a human mind or aggregation of such, but only to be of the mental order. To assume it to be of the nature of human mind would be as if a race of seaweeds were to hold that mind when it comes (the quality of deity for seaweeds) must be founded on the life of seaweeds, and minds the offspring of seaweeds. What form the finite god would assume we cannot know, and it is idle to guess. The picture has been drawn merely in order to give some kind of definiteness to the vague idea of a higher quality of existence, deity as founded upon the highest order of existence we know. There is always a danger that such attempts at definiteness where precise knowledge from the nature of the case is out of the question may seem a little ridiculous. Fortunately when we leave the finite god and endeavour to form a conception of the infinite God in his relation to things, we may avail ourselves of what is useful in the picture and avoid the danger of seeming to affect a prevision of how things in the future will come to be. We use the picture merely in order to understand how the whole world can be thought of as possessing deity.

(b) Infinite  
God.

We have now to think, not as before of a limited portion of Space-Time, but of the whole infinite Space-Time, with all its engendered levels of existence possessing their distinctive empirical qualities, as sustaining the deity of God. But when we imagine such an individual, we discover two differences which mark him off from all finites, including finite gods. The first is this. Our experience is partly internal and partly external; that is, the stimuli which provoke our enjoyments and through them are contemplated by us (and the same account applies with the proper extension of the terms to all finites) partly arise within our bodies and partly from external ones. The objects which we contemplate are

partly organic or motor sensa and partly special sensa, in which are included our bodies as seen or touched or similarly apprehended. Now the body of God is the whole universe and there is no body outside his. For him, therefore, all objects are internal, and the distinction of organic and special sensa disappears. Our minds, therefore, and everything else in the world are 'organic sensa' of God. All we are the hunger and thirst, the heart-beats and sweat of God. This is what Rabbi ben Ezra says in Browning's poem, when he protests that he has never mistaken his end, to slake God's thirst.<sup>1</sup> For God there is still the distinction of enjoyment or deising and contemplation, for God's deity is equivalent only to a portion of his body. But it is only for the finites which belong to God's body, all the finites up to finites with mind, that the objects of contemplation are some organic and some external.

The second difference, and ultimately it is a repetition of the first, is this. God's deity is lodged in a portion of his body, and represents that body. But since his body is infinite, his deity (I allow myself to turn deity from a quality into a concrete thing just as I use mind sometimes for the mental quality, sometimes for the concrete thing, mental processes), which represents his body, is infinite. God includes the whole universe, but his deity, though infinite, belongs to, or is lodged in, only a portion of the universe. The importance of this for the problem of theism will appear later. I repeat that when God's deity is said to represent his body, that representation is physiological; like the representation on the brain of the different portions of the body which send nervous messages to the brain. Deity does not represent the universe in the mathematical sense, in which, for example, the odd numbers represent or are an image of the whole series of numbers. Such mathematical

<sup>1</sup> "Frances, when a little one, had been told by her parents that 'in God we live and move and have our being': and then was overheard one day, when she was five years old, explaining to her younger brother that God had a stomach *ever* so big—everything in the whole world was inside it." *The Dawn of Religion*, by Edith E. Read Mumford (London, 1915), p. 32.

representation would require God's deity also to be represented in his deity; and it is not so represented in the same fashion as his body is represented.

God's  
infinitude.

The infinitude of God's deity marks the difference between him and all other empirical beings. Deity is an empirical quality, but though it is located in a portion only of the universe, which universe of Space-Time with all its finites of lower order is God's body, yet that portion is itself infinite in extent and duration. Not only is God infinite in extent and duration, but his deity is also infinite in both respects. God's body being the whole of Space-Time is omnipresent and eternal; but his deity, though not everywhere, is yet infinite in its extension, and though his time is a portion only of infinite Time his deity is, in virtue of what corresponds in deity to memory and expectation in ourselves, infinite in both directions. Thus empirical as deity is, the infinity of his distinctive character separates him from all finites. It is his deity which makes him continuous with the series of empirical characters of finites, but neither is his 'body' nor his 'mind' finite.

We are  
finitely  
infinite;  
God  
infinitely  
infinite.

For clearness' sake I must linger a little over this important and difficult matter; for in one sense our minds and all finite things are infinite as well. We are, however, finitely infinite; while deity is infinitely infinite. We are finite because our minds, which are extended both in space and time, are limited pieces of Space-Time. We are infinite because we are in relation to all Space-Time and to all things in it. Our minds are infinite in so far as from our point of view, our place or date, we mirror the whole universe; we are com-present with everything in that universe. I need not repeat at length what has been said more than once. Though only a limited range of distinct things comes within our view, they are fringed with their relations to what is beyond them, and are but islands rising out of an infinite circumambient ocean. The whole of which they are parts may shrink in our apprehension into a vague object of feeling or be conceived more definitely

as infinite. Still it is there. But this infinite world of Space-Time with its finite things engendered within it finds access to our minds only through our bodies and thence to our brains, and is cognised through our neurological processes and the combinations of them. Our minds consist of our mental processes, which are also neural ones. If we follow a dangerous method of language, or of thinking, and fancy that the objects we know are the 'content' of our minds we may be led into the belief that, since our minds contain representations of all things in the universe, our minds are infinite, in the same way as God's deity. If, however, we recollect that our minds are nothing but the processes of mind and have no contents but their process-characters we shall avoid this danger. We shall then understand how our minds can be finite in extent and duration and yet be com-present with and correspond to an infinite world.

We may distinguish two sorts of infinity, which I will call internal and external. An inch is internally infinite in respect of the number of its parts and corresponds to an infinite line of which it forms only a part. But it is itself finite in length. In the same way our minds, though finite in space-time, may be infinite in respect of their correspondence with the whole of things in Space-Time.

We said that our minds represented our bodies, because to speak generally the various parts of our body were connected neurally with their corresponding places in the cortex. External objects excite our minds through first impinging on our organs of sense. As such representations of our body, our mind is finite. But through that body it is brought into relation with the infinite world. Thus though finite in extent of space and time we are internally infinite. We are so as pieces of Space and Time. But also within the brain there is room for multitudinous combinations initiated from within and enjoyed as imaginations and thoughts, and, for all I know, these are infinitely numerous in their possibilities of combination. We have at least enough of them to

comprehend the universe as a whole so far as such apprehension is open to our powers.<sup>1</sup> It is sufficient for our purposes of argument that our minds as spatio-temporal substances are like all spatio-temporal extents internally infinite. Externally we are finite.

But there is nothing whatever outside the body of God, and his deity represents the whole of his body, and all the lower ranges of finites are for him 'organic sensa.' The spatio-temporal organ of his deity is not only internally but externally infinite. Deity, unlike mind, is infinitely infinite.

Thus when we are said to represent the universe in our apprehensions we must be careful to distinguish this sense of representation, which in truth signifies only the fact of compresence, from the physiological sense in which the brain is said to represent the body, the sense in which I have used the term in this chapter, in which the mind represents the bodily organism in which it is placed. Failing to make this distinction we should conclude as Leibniz did that the monad, since it represents the whole by standing in relation to every part of it, is in itself infinite and eternal. The mind is thus removed from the limitations of Time and Space. From our point of view, the mind exists both in time and space; and if it is true that Time is nothing without Space, it is difficult to understand speculatively how an eternal existence of the mind could be possible without that specialised complex of space which experience tells us is the basis of mind. If convincing experiment should in the future demonstrate the persistence of mind without its body which here subserves it, I should have to admit that the doctrine of this work would require radical

<sup>1</sup> To illustrate this qualification. If it is true that our enjoyment of the past is a past enjoyment, as has been maintained in a previous chapter (Bk. I. ch. iii.), must our minds not then, it may be asked, be eternal? This would be so if we had memory of all the past and anticipation of all the future. But I do not remember the death of Julius Caesar, but only think of it as a past event. The past which I have not been present at, and the future at which I shall not be present, shrink into a thought of past and future time, just as I think of the whole of Space without being sensible of all its parts.

alteration and, so far as I can judge at present, destruction. But this is not the only word which I should wish to say on so tender and, to many persons so precious, a belief.<sup>1</sup>

We are now led to a qualification of the greatest importance. The picture which has been drawn of the infinite God is a concession to our figurative or mythological tendency and to the habit of the religious consciousness to embody its conception of God in an individual shape. Its sole value lies in its indication of the relation that must be understood upon the lines traced by experience to subsist between deity and mind. This is adequate for finite gods, supposing the stage of deity to have been reached. But the infinite God is purely ideal or conceptual. The individual so sketched is not asserted to exist; the sketch merely gives body and shape, by a sort of anticipation, to the actual infinite God whom, on the basis of experience, speculation declares to exist. As actual, God does not possess the quality of deity but is the universe as tending to that quality. This *nisus* in the universe, though not present to sense, is yet present to reflection upon experience. Only in this sense of straining towards deity can there be an infinite actual God. For, again following the lines of experience, we can see that if the quality of deity were actually attained in the empirical development of the world in Time, we should have not one infinite being possessing deity but many (at least potentially many) finite ones. Beyond these finite gods or angels there would be in turn a new empirical quality looming into view, which for them would be deity—that is, would be for them what deity is for us. Just as when mind emerges it is the distinctive quality of many finite individuals with minds, so when deity actually emerges it would be the distinctive quality of many finite individuals. If the possessor of deity were an existent individual he must be finite and not infinite. Thus there is no actual infinite being with the quality of deity; but

<sup>1</sup> Later, ch. iii. pp. 423 ff.



there is an actual infinite, the whole universe, with a *nisus* to deity ; and this is the God of the religious consciousness, though that consciousness habitually forecasts the divinity of its object as actually realised in an individual form.

God and  
other  
infinities.

The reason why the universe as possessing deity is purely ideal is found in the contrast between God so described and other empirical infinities. God is not the only infinite. We have, in the first place, the infinite Space-Time itself which is *a priori*, and besides this we have infinities which are generated within Space-Time and are empirical. Instances are infinite lines in Space and infinite numbers. These are empirical determinations of categorial characters and belong to the class of existents with purely primary qualities. Hitherto in the preceding chapters we have confined ourselves to finites, but it now remains briefly to discuss these empirical infinities, which are always less than the *a priori* infinity of Space-Time itself. God is no exception to this statement, for though his body is the whole universe, his deity (and deity is what distinguishes him) is lodged in an infinite portion only of this whole infinitude. Empirical infinities with primary qualities were touched upon in a preceding chapter, and in view of this very question how far they were ideal and how far real.<sup>1</sup> Along with the empirical infinities go the beings which are infinitely small.

Unqualified  
infinities  
actual ;

In both cases there is an ideal or conceptual element involved as well as a sensible or, to speak more properly, an intuited one. Neither the infinitely great nor the infinitely small is presented to intuition without the help of reflective concepts. But since concepts are as real as percepts their presence does not destroy the actual reality of the thing into which they enter. I do not propose to discuss the status of the various kinds of infinite numbers and to consider how far, if at all, any of them are to be treated as on a level with the conceptual creations of mathematics such as imaginaries or

<sup>1</sup> Bk. II. ch. ix. vol. i. pp. 324 ff.

*n*-dimensional 'Spaces.'<sup>1</sup> I am speaking of such empirical infinities as infinite lines or the number of, say, the infinite system of integers. It might be thought that such infinities cannot be more than ideal because it is impossible to possess them completed. There seems, however, no reason to doubt the actuality of infinite lines, nor of the number of the integers, whether number is defined extensionally or, as we have preferred, intensionally. For infinite number is the number belonging to classes containing infinite members. The fact that an infinite system cannot be completed is irrelevant to its actuality. For infinity means only that the infinite system can be represented in the mathematical sense by a part of itself, and it is indifferent that we cannot in intuition complete an infinite line. To suppose that the infinitely great must be completed is to eliminate Time from its nature ; just as to suppose that the infinitely small is an indivisible self-subsistent entity or infinitesimal is to eliminate Time from its nature. Infinities, whether of division or of composition, are actual, just because of the element in them which makes them conceptual for us. Points and instants are not fixed minima but the elements of things, and their characteristic is that we can never come to a stop with them. Hence it was said before that points and instants, or more properly point-instants, are real and actual just because they are ideal. If we could take them in at once they would not be continuous with one another. The same thing holds of empirical infinities. Lines are actual and infinite and can be selected from Space, and infinite numbers, or at least some of them, from actual Space-Time.

Now these infinities are without quality. God as the possessor of deity, on the other hand, is a qualified infinite, and we learn from experience that quality is borne by finite complexes of space-time. There may be actual infinities with none but primary qualities, for these are not qualities at all, and the entities in question are infinite portions of the infinite Space or Time. But the qualified infinite is not merely ideal as implying, like all

but not  
qualified  
infinities.

<sup>1</sup> Touched upon in Bk. I. ch. v. vol. i. pp. 158 ff.



infinities, a conceptual element, but it is ideal because it is not actual. At any level of existence there is a claimant to be a qualified infinite, and that claimant is not actual. It is a projected picture of an actual infinite, in which that quality is being engendered but has not actually come to birth.

The qualified infinite, if the quality could be actually realised, would present overwhelming difficulties, when we ask if it is subject to the categories. God's body, being the whole universe of Space-Time, is the source of the categories but not itself subject to them. Since his deity is realised in a portion only of the universe, it might be thought that deity at any rate, which is equivalent to some complex of mind, might be subject to the categories, and be a true individual substance. It is not however an individual, for an individual is the union of particular and universal. And realised deity is not universal, since, representing as it does the whole, it admits of no repetition, which is vital to a universal.<sup>1</sup> We can only say that, like Space-Time itself, it is singular. Neither is it a substance, for the same reason. Representing the whole in the physiological sense, it admits no relation to other substances, but is the whole of Space-Time on a reduced scale. In this breakdown of the attempt to apply to it the categories (for the same considerations can be advanced in the case of the other categories as well) it betrays its merely ideal character of a picture and nothing more. The picture is not the less eminently worth drawing. Only nothing actual corresponds to it. We have an individual forecasted which is not a real individual. The actual reality which has deity is the world of empiricals filling up all Space-Time and tending towards a higher quality. Deity is a *nisus* and not an accomplishment. This, as we shall note, is what prevents the conception from being wholly theistical. Finite gods, on the other hand, are of course subject to the categories.

Two different questions accordingly may be asked

<sup>1</sup> It is of course a 'concrete universal'; but that conception has been already examined (Bk. II. ch. iii. vol. i. pp. 233 ff.).

as to the existence of deity, to which different answers must be given. The first is, do finite beings exist with deity or are there finite gods? The answer is we do not know. If Time has by now actually brought them forth, they do exist; if not, their existence belongs to the future. If they do exist ("millions of spirits walk the earth") they are not recognisable in any form of material existence known to us; and material existence they must have; though conceivably there may be such material bodies, containing also life and mind as the basis of deity, in regions of the universe beyond our ken.

That is a scholastic and trivial question. The other question admits an answer. Does infinite deity exist? The answer is that the world in its infinity tends towards infinite deity, or is pregnant with it, but that infinite deity does not exist; and we may now add that if it did, God—the actual world possessing infinite deity—would cease to be infinite God and break up into a multiplicity of finite gods, which would be merely a higher race of creatures than ourselves with a God beyond.

Infinite deity then embodies the conception of the infinite world in its straining after deity. But the attainment of deity makes deity finite. Deity is an empirical quality like mind or life. Before there was mind the universe was straining towards infinite mind. But there is no existent infinite mind, but only many finite minds. Deity is subject to the same law as other empirical qualities, and is but the next member of the series. At first a presage, in the lapse of time the quality comes to actual existence, animates a new race of creatures, and is succeeded by a still higher quality. God as an actual existent is always becoming deity but never attains it. He is the ideal God in embryo. The ideal when fulfilled ceases to be God, and yet it gives shape and character to our conception of the actual God, and always tends to usurp its place in our fancy.

I may pause for a moment to anticipate a possible

Finite gods  
and infinite  
God.

How can a  
variable  
God be the  
whole  
universe?

objection to this notion of a variable God, which is, as it were, projected in front of each successive level of existents. Since God's deity is different for plants and men and angels, and varies with the lapse of time, how can we declare him to be the whole universe? Must not God be different at each level? I answer that the variation lies in the empirical development within the universe, and therefore not in God's totality but, first of all, in his deity, and secondly, and in correspondence therewith, in the orders of existents within his body which have as yet been reached. It is still one Space-Time within which grows up deity in its successive phases, and within which the body of God varies in its internal composition. Yet God's body is at any stage the whole Space-Time, of which the finites that enter into God's body are but specialised complexes. Only certain existents, qualified or unqualified, are at any one moment actual or present. The rest are past or future, but they are included as past or future in total Space-Time as it is in any one moment of its history. They are only not actual. It is thus always the one universe of Space-Time which is God's body, but it varies in its empirical constitution and its deity.<sup>1</sup> For we are not to think of the matrix, Space-Time, as something which grows bigger in extent with the lapse of Time; its Space is always full and it grows older through internal rearrangements, in which new orders of empirical finites are engendered. No matter therefore what quality the deity of God may be, his body is always the whole Space-Time.

Blending of  
finite gods  
and infinite  
deity.

Thus the conception of finite gods and that of infinite God are different conceptions in metaphysics. In the one we are transporting ourselves in thought to the next order of finites; in the other we think of the whole world as tending towards deity or godhead. But in the inevitable blending of speculation and pictorial mythology the two conceptions may be confused. This occurs, for instance, wherever God is conceived merely as the chief

<sup>1</sup> Cp. the same topic discussed in another connection, Bk. II. ch. x. vol. i. p. 339.

in the hierarchy of gods and not different in quality from them. For as we have seen, in speculation, either there is an infinite God, which is an ideal, and there are then no angels or finite deities; or if there are finite gods, the infinite or supreme ideal has ceased to be God. Polytheism represents the attempt to secure deity in finite forms, and it is not unnatural that in this imagination the divine quality should also be construed in terms of our humanity and the gods be conceived as transcendent human beings. Polytheism seeks to do justice to the claim of religion and speculation for a higher quality of existent. But it misses the conception of a God who is in his body coextensive with the whole world. In some polytheisms, like that of the Greeks, this defect is made good by recognising a rule of necessity or fate to which even Zeus is subject. Here we have the totality of things in its infinite quality. I have not knowledge enough to say how far in other polytheisms a corresponding element is to be found. But if the contention of certain anthropologists is sound,<sup>1</sup> there is in savage theologies a stage of pre-animism which precedes the belief in more or less human spirits or ghosts, resident in trees or stones and corresponding in their definiteness to what we have called finite gods or angels. The sense of something mysteriously spiritual, not definite but vaguely animating the world, would be, if these contentions are sound, the imaginative presage of what our speculation calls the ideal infinite deity, expressed in the forms natural to the mind for which deity as the next empirical quality would seem to be a vague abstraction.

It remains to observe that the conception of an infinite world contains nothing which does not follow the lines of experience. The *nisus* in the world which drives it, because of Time, to the generation of fresh empirical qualities is a verifiable fact. Its extension from mind to deity is an application of analogy, but an analogy which is no more than an extension of what can be traced as existent already. But the notion depends undoubtedly

<sup>1</sup> R. R. Marett, *The Threshold of Religion* (London, 1909), ch. i.

on the hypothesis which has inspired hitherto our whole interpretation of things. We have still to ask whether the existence of God required by the hypothesis is verified, not in sense but in the religious emotion. To this I proceed in the next chapter, delaying for a moment over two incidental topics.

The world-soul.

Philosophy has often used the conception of a world-soul, and it might seem that we had saddled the world with a superfluity of souls. For Time has been described as the soul of Space-Time, with Space for its body. And deity also performs to God's body the office of soul and God's body is the whole world. In truth the world is considered differently in the two conceptions. The world whose soul is Time is the world which precedes quality. The world for which deity is the soul is this same Space-Time but with qualified finites evolved within it up to the level for which deity is the next quality in advance. If the ideal God could be actual, and his deity realised, deity would truly be the soul of the world in strict analogy with the human soul or the colour of things to which it has been compared, lodged like our soul or like colour in a portion of the body whose soul it is. We should only have to remember that the world-soul so conceived is a variable quality, according to the level for which it is the next in the hierarchy of qualities. But it is never realised and remains prophetic only—in the immortal phrase, "the soul of the wide world dreaming of things to come."<sup>1</sup> There is thus no true world-soul, but only a soul of Space-Time and a *nisus* in the world to deity. Soul and body are distinctions within finite things. When we take Space-Time as a whole in its purely spatio-temporal character, its soul is coextensive with its body. When we take the world of things with qualities, its soul is only ideal not actual.

<sup>1</sup> Perhaps from this point of view, though it reverses the Leibnizian order of things, we may be more inclined to find a justification for his conception of God as a transcendent monad, usually regarded as the part of his system which is most open to cavil, than if we consider only its obscurity and inconsistency.

Whether we think of Time or deity, in either case we may use the designation of a world-soul, but in either case with a qualification which is different in the two cases.

Before leaving this purely metaphysical discussion we may however profitably compare the conception of empirical deity with that of the Absolute Spirit of the current doctrine of idealism. According to that doctrine, as we have seen more than once, finites though real are not real in their own right but are real appearances of the one Absolute. The God of religion does not escape from this description and is in turn a real appearance but not ultimately real. All these appearances are contained within the Absolute but, as in it, are transformed. At the same time it is declared of the Absolute itself that it is spirit.

Comparison with the notion of an Absolute Spirit.

Now as to the first half of this statement it is not necessary to repeat at length the results of earlier discussions. Finites, though partial, are real in their own right and are not affected by their being only parts of the whole. For in the end all finites are pieces of Space-Time with that distinctive complexity of spatio-temporal structure which makes them the bearers of their distinctive empirical qualities. The finites are not lost in the whole but constitute it, and all the while are (if only as spatio-temporal complexes) in continuous connection with the whole. The finite things may through their interactions change or be destroyed or modify each other; but in this process it is their empirical characters which vary. Their reality is not affected at any moment. They are what they are. Nor, as we have urged, is there contradiction in finitude nor in the categories that describe and are constitutive of it. The measure of what is self-consistent is the nature of Space-Time itself, which for our view is the only absolute. We have avoided the designation of absolute, because it suggests mistakenly the unreality of what is relative, and prefer to speak of total Space-Time, a designation which indicates the ultimate homogeneity of the infinite whole with the finite parts.



Still, though the parts are not transformed in the whole, the conception of transformation when understood in a certain sense is legitimate and corresponds to facts. Finites of a lower order are combined to produce a complex which carries a quality of a higher order. Thus physiological complexes of a sufficient complexity carry mind or consciousness. They may be said to be 'transformed' in the consciousness they carry. This is the empirical fact. But in the complex which thus acquires a new quality the parts retain their proper character and are not altered. The physiological elements remain physiological. So does the complex of them; though since it is also psychical, it is not merely physiological but something empirically new. All the chemical substances which exist in the organic body perform their chemical functions. The water in our bodies remains water still. It is the physico-chemical constellation which carries life. Thus even when we go beyond bare spatio-temporal forms which are the basis of all finites and consider things with their empirical qualities of colour, life, and the rest, we see that the parts are used up to produce something different from them and transcending them, but, used up as they are, they are not altered or superseded but subserve. In this special sense there is 'transformation' of the parts in building up a higher existence, but the parts remain what they were.

In the same way a complex of parts which are of the nature of mind becomes the bearer of a quality of deity higher than mind or spirit. In this sense there is transformation of lower quality into deity. But neither is this deity spirit; nor is deity a property of the Absolute as such. Deity is located only in a portion of the infinite whole of Space-Time, and therefore God, though infinite both in respect of his body and his deity, is only in respect of his body coextensive with the absolute whole of Space-Time, while his deity is empirical and belongs only to a part of the Absolute. Thus the Absolute is not deity as if it were permeated with that quality, any more than the human organism is mind, but only that part of the organism has mind which is equivalent to it. Hence

even if we could think of spirit as the highest quality in the universe—which we cannot, unless it means something not merely different in degree but in kind from the human spirit—we still could not declare the Absolute to be this spirit but only to contain it as an empirical quality of an infinite part of itself. And we have already seen how the realisation of such a quality means the appearance in the world of finite deities, so that infinite deity is but an ideal. But while on the one hand deity, that is God's mind, does not belong to the Absolute, in God's body which is the whole of Space-Time and is absolute the finites are not submerged nor transformed; they are constituent portions of the Absolute. Thus, where we are dealing with what is absolute or total, the parts are neither lost nor are they transformed; where we are dealing with transformation, we are referring to what is not absolute but empirical.

Thus it is true, as absolute idealism contends, that God is (at least in respect of his deity) on the same footing as finites and if they are appearances so is he, though an infinite appearance. But both God and finites are appearances only in the proper interpretation of that term, as parts of the thing to which they belong, and in which they are not submerged but retained. It still remains that neither is God a spirit, nor far less is the whole or Absolute which includes spirit itself spirit; nor is it deity but includes deity. Yet the fact that finites of a lower quality subserve a higher quality gives an intelligible meaning in accordance with experienced fact to the notion of transformation of finites which, as I think, absolute idealism maintains in the perverted sense of forfeiture or alteration. The well-attested fact that the lower life subserves in the course of time the higher is perverted into the erroneous doctrine that there is a higher something or Absolute in which all lower life is submerged and transformed, and this Absolute is spirit, which is not even the highest empirical quality. Dowered with this empirical quality the Absolute claims to be above the empirical, but would be itself empirical. This result is to my mind the inevitable



outcome of the procedure, which I need not again criticise, of taking the measure of consistency and contradiction from our thoughts instead of from things themselves, of pronouncing Space and Time to be contradictory; whereas it is only obedience to the nature of the one "mother" and "nurse of all becoming" which determines consistency and freedom from contradiction.

## CHAPTER II

### DEITY AND THE RELIGIOUS SENTIMENT

THE metaphysical notion of a reality which is the whole world in its endeavour towards a new and higher empirical quality than the highest we know is verified by the religious sentiment itself. Various emotions enter into the full constitution of the religious sentiment—fear, admiration, self-abasement—but its distinctive constituent is the feeling of our going out towards something not ourselves and greater and higher than ourselves, with which we are in communion, a feeling whose object is not that of any of these subsidiary or suggesting emotions, nor of any combination of them. Like the other sentiments, it is fed from many sources, but it gathers around some distinctive constituent as its primary nucleus. The nucleus of the sentiment of love is the tender emotion, around which gather in a system which is dominated by that emotion all manner of other emotions—fear for the safety of what is loved, anger against those who injure it, joy in its success, depression at its misfortunes.<sup>1</sup> Even in the aesthetic, moral, and logical sentiments there is a dominating and distinctive passion—the passion for production, the passion of sociality, and the passion of curiosity. Without this distinctive element, a senti-

The religious sentiment and its object.

<sup>1</sup> The doctrine that a sentiment is a system of emotions is due to Mr. A. Shand (*Mind*, 1896, and *Foundations of Character*, 1914). My statement is closer, I think, to the version of Mr. M'Dougall in his *Social Psychology*, though I cannot enter into the controversy between these writers. But in what is said later on the specific element of the religious sentiment I find myself at variance with Mr. M'Dougall's account in the same work (ch. xiii.).

ment would be a mere composite without its peculiar flavour.<sup>1</sup>

Moreover, it is this distinctive religious appetite, comparable to the appetite for food or drink, which though it does not make its object discovers it. Here too the religious sentiment is in line with the other emotional tendencies. We do not first learn to know the objects to which we respond, but in responding to objects we discover the properties which they possess. Knowledge comes with action or the response to the things which we know. The food is presented to us as flesh or grain through one sort of response; it is in another sort of response, the expression of the appetite which it arouses, that we discover it to be food and capable of satisfying our hunger. The child we love is presented to us as a small and perhaps helpless human being, but we cognise it as lovable in the caresses and tender care which it elicits from us by the instinctive reaction. Without the reaction which they provoke in us the objects of our emotions would not reveal to us the properties which make them into such objects. If we are inclined to overlook this truth, it is because, as experience grows, familiarity with things may bring about the reaction through a previous cognition. Thus I may dislike a person because I have first learnt he has certain qualities which in general excite repulsion. In the developed life cognition and emotion become intertwined, so that the cognition may seem to be the prior. But in our original experience it is the emotion which discovers the corresponding object of cognition.

Hence it is impossible to explain the religious sentiment as a composite of various emotions, not specifically religious, which we feel towards God. For this presumes that we can begin with a cognition of God and that towards the object so presented we feel these emotions. The question we have rather to ask is, how is the

<sup>1</sup> The religious sentiment is however unlike the sentiments of the tertiary qualities that the religious response does not create its object, in the sense explained in Bk. III. ch. ix., but finds it. In this respect it is like appetite or simple emotion, or the other sentiments, such as love.

intellectual notion of God revealed to us? The fear of the thunderstorm is not the fear of God, though such fear may be the first channel by which the religious sentiment is provoked (*primus fecit deos timor*). It is merely the feeling that the thunder is terrible. That God is present in the thunderstorm is discovered only in the feeling which is our outgoing towards something or other which works through the thunderstorm or resides therein. That there is this something or other is not the discovery of reflection. The metaphysical interpretation of deity as that to which the world is tending, or any other metaphysical interpretation of God, is as far as possible from being an original discovery of knowledge; it is only possible to reflection working upon primitive notions already acquired. Even the idea that there is something mysterious which we fear or reverence is never in the first instance a piece of cognition; but is revealed to our wondering response, our uneasy astonishment and curiosity. It is the feeling or emotion which images the object, not the idea which induces the emotion. When we ask how we come by the cognition of God we must answer that, as with love and hate and appetite and aversion, it is because the world itself provokes in us a specific response which makes us aware, no matter in how primitive a form, of God, and this specific reaction is what has been described above as a going out to something in the world with which we are in communion.

In order further to explain the nature of this reaction and the object which excites it, I may refer to the conclusion of William James's famous inquiry. His method has been subjected to many criticisms, that he neglects the ordinary calm religious sentiment of the ordinary man in whom it does not usually rise into enthusiastic exaltation or fall into the complementary depression, and confines his attention to exaggerated or even pathological forms of the sentiment, and that his data are to a very large extent drawn from the records of evangelical protestantism. These criticisms have

The nature  
of its  
object.

their weight, but at least it is true that truth is most likely to be found in the beginning in what Bacon calls flagrant instances. The gleams of religious feeling which the common man from time to time detects he may interpret by the experiences of mysticism or of conversion.

The conclusion James drew from his data was that in religion "the conscious person is continuous with a wider self through which saving experiences come";<sup>1</sup> and impressed by the automatisms of inspired leaders of religion, he supposes that it is from out the subliminal strata of our personality that the religious emotion arises into consciousness by a kind of uprush from below. Now without attributing to the subliminal any superiority over the conscious, and interpreting it rather, as has before been suggested,<sup>2</sup> as in reality something physical or physiological into which the conscious sinks when it ceases to be conscious and out of which it can rise in turn, we may I think adopt this general conception and add to it that the world as a whole in its forward tendency acts upon our bodily organism and that the religious sentiment is the feeling for this whole. Parts as we are of Space-Time we throw out feelers towards the rest of it and we are accessible to its influences. The body of the universe affects our body, and the ultimate response in consciousness is this emotion. Like hungry appetite it is a conation whose object, God, is to it as food to hunger. The religious conation which sets us in search of God is our groping out to the reality which is God. This religious appetite may either be stirred in us directly by the impact of the world with its tendency to deity, or it may first be felt by us as a need of our nature; just as the appetite of hunger or the sexual impulse may be stirred by the presence of an appropriate object, but may also set the organism in search of satisfaction, though the object may not be definitely apprehended till it is found. In either case it is the world in its nisus forward

<sup>1</sup> *Varieties of Religious Experience*, p. 515.

<sup>2</sup> Compare above, Bk. III. ch. i. A. pp. 25 ff.

that grips the finite conative complex which is fitted to it. It excites religion in us, and we in turn feel the need of it.

The religious emotion or appetite has no specific organ through which it works. Other appetites have, and even the other emotions depend upon specific mental and bodily reactions. But the religious appetite or emotion depends upon the whole make-up or constitution of the mind and body, and is the response of it to the whole of reality in its nisus towards a new quality. In that forward movement due to the onward sweep of Time our minds with their substructure of body are caught, and our religious response is at once the mark that we are involved in that nisus, and that our minds contribute in their part towards it. The world in its bearing towards a new empirical quality may be concealed from the cognitive mind, for though we are always in cognitive compresence with what is outside us, neither can the new empirical quality be contemplated, for we know not what it is, nor even enjoyed, since it is higher than mind. It makes itself felt in the religious sense, which thus discovers the world it sees to be clothed with divinity. For the world is not merely what it is for intellect alone; its nisus towards what is higher enters into its constitution, and as impregnated with this tendency it affects the mind by ways other than cognition, though interpretable in the ways of cognition. The whole world with its real tendency to deity stirs in us from the depths of our nature a vague endeavour or desire which shadows forth its object. Then intellect comes into play, and discovers in detail the characters of this object, and finds at last what it truly is, the tendency of the world forwards towards a new quality.

Thus, if this interpretation be correct, the object of religious sentiment is no mere imagination which corresponds to a subjective and possibly illusory movement of mind. We are in perpetual presence of this object, which stimulates us, some of us more, some less; is sometimes felt and sometimes left unexperienced

Not a mere  
imagina-  
tion.

according to our condition, just as the most appetising luxuries leave us cold when we are satisfied. It may be entirely absent from some who are insensitive to its peculiar flavour or only faintly sensitive; a man may be partially or wholly deity-blind, as he is tone-deaf, or has no attunement with scientific truth: he may lack the emotional suggestibility for deity. Yet most are suggestible to it in their degree, as most see colours and not mere greys. Of this world with its deity in advance it is true to say what James says of "the mystical or the supernatural region": "the unseen region in question is not merely ideal, for it produces effects in this world. When we commune with it, work is actually done upon our finite personality, for we are turned into new men, and consequences in the way of conduct follow in the natural world upon our regenerative change. But that which produces effects within another reality must be termed a reality itself, so I feel as if we had no philosophical excuse for calling the unseen or mystical world unreal."<sup>1</sup> I only demur to calling the mystical world unseen or even mystical. It is partly seen and partly object of thought, but it is its new quality, which is higher than anything we know, that cannot be seen or understood, though its presence in reality is forced upon us both in philosophical conception and in the feeling it evokes in us of itself.

Thus religious feeling itself suggests the notion of God which when elaborated by reflection is discovered to be that of the world big with deity. And in turn when we start with this notion which is forced upon us speculatively by the behaviour of the world, we verify it in its effects, as we verify the existence of ions, or observe a predicted comet or planet through our telescopes, by finding what element it is in our human experience which corresponds to it, and indeed in practice discovers it.

Only one point seems to me obscure in this account of how God's deity makes itself felt in the individual

How a  
future  
quality can  
affect us.

<sup>1</sup> *Loc. cit.* p. 516.

soul. Deity is some quality not realised but in process of realisation, is future and not present. How then, it may be asked, can the future make itself felt energetically in our minds, draw them towards itself and satisfy them? Now we must remember that deity is not as such cognised, is not before our minds as a matter of contemplation. The reflective contemplation embodies the feeling and follows on it. All that we have for cognition is the world of cognition interpreted by the notion of infinitude and of its tendency to deity. The world which works upon our religious suggestibility is the actual world, but that actual world contains the seed of its future, though what future forms it will assume is hidden from us, except so far as we can forecast it in spatio-temporal terms. What acts upon us is what is to bring forth deity. I may illustrate by reference to clairvoyance. I do not raise the question whether there are or have been persons who can foresee the future. Yet at least I see nothing (consistently with what was said in a previous chapter about the limits of prevision of the future) extravagant or startling in the claim. The future will be what it will. But since it will be the causal outcome of what is present actually, there may be minds so sensitive to the influences at work in the world that they may divine certain future events. What seems to me open to the gravest question is that any character of the future which transcends our hitherto experienced orders of fact should be foreseen. Yet the clairvoyant might be like a person of genius—more sensitive to things than the ordinary run of persons. Imposture to some limited extent, and to a very large extent suggestion from subtle sources of knowledge, perhaps not clearly known to the person himself, arising perhaps from telepathic communication from those who have experience, play so great a part in these phenomena that we may well suspend judgment. But there is no intrinsic impossibility or even improbability in the alleged powers. In the same way we may suppose that in religious experience the vague future quality of deity is felt, not in its quality, for that cannot be known, but as giving a flavour



to the experience of the whole world which it does not possess as merely an object of sense or thought.

Assurance  
of God and  
of foreign  
minds.

In a famous passage, Berkeley affirms that we know God by evidence of the same sort, but wider, as we know each other. The world of nature is the external sign, the divine visual language, by which we know God's mind, as we know each other's minds by their gestures. How entirely the alleged inference of other minds from their bodily gestures fails to account for our belief in them we have already seen. The notion of a foreign mind would on this showing be a miraculous invention. Berkeley was so far right that our apprehensions of other minds and of deity are nearly related, because in both cases we go beyond sight. But he did not recognise that in the end, alike in sensation and in faith, it is our mental responses to objects that discover the objects to us as objects of cognition: that there is no apprehension distinct from our conations, but only objects which as apprehended through our responses to them are *cognita*.

It is of greater importance to dwell upon the difference in our apprehension of other minds and of deity, which is not mind at all but a higher quality. We are assured of other minds through the social emotion,<sup>1</sup> and of deity through a different response, the religious emotion. Each of them is specific to the object it discovers, which in both cases is neither contemplated nor enjoyed, but is that which corresponds to assurance, or faith. Faith in other minds may be called practical assurance. Faith in God we may be content to describe simply as faith. Now we are sure of one another's minds because we are social beings; but the social instinct is satisfied only by reciprocal actions on the part of others. There is no such reciprocal action from God. For though we speak, as we inevitably must, in human terms of God's response to us, there is no direct experience of that response except through our own feeling that devotion to God or worship carries with it its own satisfaction.

<sup>1</sup> Above, Bk. III. ch. i. B.

The universe does not answer to our prayers by overt external actions as our fellows respond to our social approaches to them, but in the strength and sustainment which in its tendency to deity it gives to our minds. In both cases it is intercourse with the object which discovers it to us, but religious intercourse is different from social intercourse, and only called such by a metaphor. In this respect our faith in God is nearer to simple sensation than our assurance of other minds. The assurance of the reality of God we cannot call surer than our assurance of each other's minds; both are equally sure; but it is simpler. Moreover, being infinite, God has the wider and deeper attachments in the nature of things, as Berkeley recognised.

There is a further difference between the two. Were it not for the social experience, we could not speculatively invent the idea of another mind than our own, the one which we enjoy. Analogy does not help us speculatively. Now, the notion of God comes to us also through emotion or instinct, and it is only subsequently that we are led to look for a speculative statement of the object which corresponds to it. Yet it remains true, that speculatively, even without the practical revelation of God, we can arrive at the postulate of a world tending to deity, though we could not discover it to be worshipful. There is no such miracle as is involved in the speculative or intellectual discovery of a foreign mind in conceiving a higher type of empirical quality than mind, provided only we do not attempt to describe what it is. For we become familiar with levels of different quality, and we may by analogy conceive a higher type unfolded by the onward pressure of Time. There is no invention here, but only extension of a series whose principle is known, to another term. Even without the religious emotion, we could on purely speculative evidence postulate deity, on the ground of the general plan on which Space-Time works. Thus we are sure of other minds only on the ground of specific experience; we are assured of God's reality on the ground both of specific experience and speculative evidence, derived from experience itself.

The belief reposes on this double basis; or at least when emotion assures us of God, we can look for speculative evidence of him in experience, and the direct experience and the speculative one support and supplement each other.

Religious  
criteria of  
the concep-  
tion of  
God.

So far then the speculative conception of God satisfies the requirement of the religious sentiment in its unquestioning faith in the reality of its object. If religion is a man's outgoing to the whole in its divine quality, felt unreflectively in the peculiar flavour of that sentiment, it is justified of philosophy, and the ground is cut from the feet of any attempt to treat religion as a mere practical necessity of man's nature, which might have no foundation in fact and yet might be precious because of the contentment it brings, or as some have thought, because of the usefulness of the belief for securing morality. The feeling for the whole in its divine quality is a feeling whose object is postulated by philosophical experience. Some of the tests by which the sufficiency of a philosophical conception of God for the religious sentiment itself are judged have been already included more or less explicitly in this exposition. To speak roughly, there are four such criteria. The religious sentiment requires of God that he should be greater than man, a 'universal' or all-inclusive being, different in quality from man, and, finally, responsive to man, so that he offers us, in W. James's language, "a solution of our uneasiness," whether that uneasiness is derived from our feebleness and finitude or from the more intimate sense of our shortcomings and sin.

(1) God  
greater  
than man;

Of the first two of these criteria little need now be said. Even the blind fear of natural forces, which is declared to be in part the origin of primitive religion, and remains an element in the most advanced religion, attests the religious conviction of some overpowering thing in the world. Magic, which is so closely allied with religion, is in the first instance the arts by which it is supposed that this mighty being may be persuaded or cajoled into satisfying the wishes of his worshippers.

It has been said to be the foundation of science which acquires power for man over nature by obedience to her, by searching out her secrets. But I do not enter into the controversial question whether for this reason magic is to be sharply distinguished from religion, any more than into the old controversy, now surely grown somewhat tedious and obsolete, whether science and religion are irreconcilable or harmonious—as if in the end a just conception of what is true about one element in the universe could be at variance with a just conception about what is true of another element in it.

Not only is God a mightier being than man; his empire, whether directed by a single God or put into commission as in polytheism, is extended over the whole universe. In some sense God acts through the whole—we have said that the whole of Space-Time with its finites engendered within it is the body of God; or if there are many gods they act through allotted parts of it—fire or storm or even minute departments like mildew or rust; they have domains allotted to them as in Greek mythology, where the idea of fate or *moira* is that of allotment.<sup>1</sup>

The other two tests are for developed religions the more significant, and I am speaking of the developed religious consciousness, though there is a certain temerity and at any rate difficulty, for a person who does not possess it in a marked degree or except fitfully at all, in the undertaking. Sympathetic intelligence may to some extent in such a person take the place of direct and vivid experience. In the first place, the religious consciousness recognises that God's divinity is not merely a higher humanity but something different in kind. Omniscience, omnipotence, infinite goodness, eternity, which popular religious reflection attributes to God, are, as Hegel observed, the figurative disguises of a faith in something of a different order from man. Omniscience does not so much mean a vastly extended knowledge. Infinite wisdom is not merely a wisdom greater than any conceivable wisdom; nor infinite goodness merely a

(2) uni-  
versal;

(3) different  
in quality  
from man;

<sup>1</sup> Cp. F. H. Cornford, *From Religion to Philosophy* (London, 1912), ch. i. § 6.

thoroughgoing morality, but a new strain of character. But since we cannot picture this higher quality to ourselves but only have faith that there is such, we satisfy our pictorial and mythologising instinct by imagining a man or personality of vaster power, intelligence, wisdom and goodness than ours. Men have even been persecuted for holding that eternity of punishment meant not a punishment indefinitely continued but some new flavour of retribution. Now we have seen that deity in a monotheistic God, though lodged in a portion only of the universe, is lodged in an infinite portion and is therefore eternal, but that this conception is valid only so long as deity is in process and not actually realised. On the other hand omniscience and perfect goodness do not belong to deity at all. Deity does not know, but only the minds know which are included in the body of God. Deity knows only in the extended sense of knowing which is not human knowing nor any extension of it. God's 'knowing' is his contemplation of things, his 'knowledge' the objects of his acts of enjoying his deity. Moreover, infinitely as his deity is extended in space and time, and though he contemplates the whole of Space-Time, even deity contemplates only those qualities which have been hitherto developed within Space-Time, and he cannot foretell the quality which shall in good time supersede his deity, any more than we humans can foretell what qualities shall supersede mind. There is always impending over him the menace which Prometheus levels against Zeus of supersession by a higher God. In this way God's 'knowledge' is limited and it is something higher than knowledge. In the same way all goodness is included in the body of God, for goodness belongs to the minds which are within that body. But for those minds there is no perfect goodness, no limit to perfection in conduct; while on the other hand, deity being raised above willing is not goodness at all. These discussions belong, however, to a later stage of our exposition where the relation of deity to value is discussed.

The responsiveness of God to man is the most vital

and distinctive feature in the religious sentiment, most patent in the higher religions, but traceable faintly throughout the history of religion. Even in elementary religion, though there is so large an ingredient of fear or awe, there is also the dependence of man upon God. At a more advanced stage we have the consciousness which is described in the language of philosophy or theology as the sense of identity of God and man: "that art thou" in Brahmanism. The current notion represented by T. H. Green in this country of a divine mind which makes human minds organic to itself and works through them (a notion affiliated historically to Kant's doctrine of mind or "consciousness as such" (*ueberhaupt*) which is objective, as contrasted with the empirical mind which in Kant's conception is psychological), is not far removed from this older philosophy. This is the pantheistic sense of the divine response, and it tends towards the feeling of absorption in the divine. In the more theistic religious consciousness this responsiveness culminates in the fatherhood of God. In this conception may be traced the primaeval mystery which is the root of religion; for to the child the father is the mysterious something which he discovers to be like himself, a person by whom he is sustained but who issues arbitrary commands which the child must obey. When religion deepens and is moralised, the apparently arbitrary interpositions of God are attributed humbly not to caprice but to good reasons on the part of God, inscrutable still, but a wise and just providence. But also in the feeling of God's fatherhood, the sense of mystery is coupled with and overshadowed by the sense of sustaining love in his relation to his children and of trustful dependence on their part which is not disappointed but, rather, relieved. Whatever God is, and however he is conceived, there is then this affinity between him and us, and in its higher moods the religious mind conceives itself as doing God's work in doing best the work of man ("then most godlike, being most a man"), and conceives God as speaking to man in his conscience or in his passion for truth or beauty.



and worthy  
of man's  
trust.

But the community is one of co-operation. The individual is sustained by trust in God but he wants and claims the help of God as a child his father's, and in turn God reciprocates the worship man pays him and the confidence he reposes in him. There is always the double relationship of need. If man wants God and depends upon him, God wants man, and is so far dependent. Or the same thing may be put otherwise in respect of our feeling of dependence upon God. That feeling is not simply one of helplessness. It is the claim we make for some one to help us. In his admirable book, *The Philosophy of Religion*, Mr. H. Höffding, criticising Schleiermacher's famous reduction of religion to the feeling of dependence, observes that "he does not sufficiently emphasise the point that this dependence is conditioned by an activity, and that it appears at the limits of this activity. Nor does he make it sufficiently obvious that this dependence makes itself felt in the struggle for those values which appear to man to be the highest."<sup>1</sup> In other words, if I understand aright, our dependence is not merely the sense of our feebleness which we discover to be relieved by God, but it is the demand on our part for relief from some one who fulfils our needs and is perfect where we are imperfect. I shall have to speak in the next chapter of whether God is most fitly conceived in the language of values, but apart from this question the above observation appears most just. Even in mysticism this claim for God to satisfy us is retained. Mysticism does not mean utter self-abandonment. It contains, as I remember is remarked somewhere in the book I have been referring to, an element of egotism, which is apparent in the records by St. Theresa of her ecstasies. And indeed a self-abandonment in which there was on one side complete loss and on the other side no gain is scarcely conceivable.

Thus in the more developed religious mind our trust in God is given freely, and the obedience to him is a "dignified obedience,"<sup>2</sup> rendered by a person, in his

<sup>1</sup> *Philosophy of Religion* (London, 1908; Eng. trans.), p. 115.

<sup>2</sup> The phrase is of course Burke's.

limited and imperfect fashion independent, with his standards of what is great and highest, to a higher being who sustains him but whom he regards as worthy of such trust. There is not merely reliance upon God but co-operation between the two parties to the religious transaction. We do not merely resign ourselves to something greater, but that something is a partner with us. Mr. Höffding traces the growth of polytheism to "this need of feeling that in the midst of the struggle we have a fellow struggler by our side, a fellow struggler who knows from his own experience what it is to suffer and to meet resistance."<sup>1</sup> I cannot judge how far this motive can be said to be the principal root of polytheism. But monotheism admits the same feeling of fellowship between God and man. At any rate what is important for our purpose is that the religious consciousness involves this element as well as that of dependence. Doubtless the feeling that what we are matters to God, and that by our action we may affect him, is the less prominent in the religious mind. The primitive crudity of religion and magic still attaches to the most developed beliefs of God. The being to whom men pray may be prayed to in the spirit of the naïve mind which calls upon his God to help him to secure his ends: the spirit which is ridiculed in Sheridan's play. In a more exalted but still primitive spirit two warring nations fighting for opposed ideals may call for support upon God, a God whom they believe to be the same God in both cases. Such appeals for aid are different from the mere prayer for selfish ends, because God is thought of as the supporter of the right, and each side claims his own ideal as the right. Yet inconspicuous as it may be, the higher element is still present in the religious consciousness: that our trust is given to what we ourselves approve and that God is not merely a being whom we find and have to placate or win over but whom we desire. It appears in the consciousness that goodness or even a certain ritual is not merely demanded by God but pleasing to him. It is seen inversely in the despair which overcomes certain minds,

<sup>1</sup> *Loc. cit.* pp. 162-3.



and is a kind of negative religious feeling, that if certain misfortunes can attend us or certain kinds of wickedness be allowed there can be no God. And it is, I believe, felt (though perhaps I am misled by philosophical prepossessions) as the sense that we also help to maintain and sustain the nature of God and are not merely his subjects; that God himself is involved in our acts and their issues, or, as it was put above, not only does he matter to us, but we matter to him.

So far as this is the case, the religious consciousness attests the philosophical conception that God's deity is the issue in Time of a tendency or *nisus* in the world, of which our minds and everything else of the nature of mind is the proximate highest outcome—an issue which is dependent on the nature of things lower than itself.

Theism for  
religion and  
speculation.

It is natural to turn from this imperfect statement of what the religious consciousness contains to the comparison of our metaphysical conception with pantheism and theism respectively. For though these conceptions may be treated as purely metaphysical, they belong also to the philosophy of religion; they are a blending of data derived both from philosophy and religious experience. They appeal to different elements in the religious experience, and their merits and defects as philosophical conceptions of God and his relation to the universe are paralleled by their merits and defects as attempts to satisfy the religious demand. I shall first of all compare them in these respects with one another before proceeding to compare the conception of God as the whole world tending to deity with either of them.<sup>1</sup>

For theism, God is an individual being distinct from

<sup>1</sup> In the following pages I am giving theism a twist in the direction of deism, or rather I am neglecting the distinction between the two, as I am reminded by reading Mr. Sorley's recent work, *Moral Values and the Idea of God* (Cambridge, 1918). Theism, it is said, means not merely transcendence but immanence. Not every form of theism can be said to assert immanence. And it is precisely the possibility of immanence along with transcendence that has to be explained (see later). If immanence means simply working in some department of creation, as in human

the finite beings which make up the world; whether as in the popular theistic belief he is regarded as their creator or as in the doctrine of Aristotle moves them from without as the object of their love, as a man's good sets his appetite into operation. In either case he transcends finite things. For pantheism, on the contrary, God is immanent in the universe of finite things. In the more popular or easy-going form of it, which has received classical expression in the famous passage of Pope ("warms in the sun, refreshes in the breeze, etc."), God is a pervading presence. In the profounder forms of it, as in Spinoza, everything is a fragment or mode of God, is unreal or only relatively real apart from God, and finds its reality in God. It is not so much that God is in everything but rather (I am again quoting Hegel) that everything is in God. The Absolute in the current idealism takes the place of God in pantheistic metaphysics, while God himself becomes an appearance, and that is the reason at once why the name of pantheism is not applicable to such a system of thought and why the position of God in the system is so indefinite.<sup>1</sup>

Theism makes appeal to the personal or egotistic side of the religious consciousness, the feeling that in surrender the worshipper still retains his individuality and achieves it in the surrender; much as in pursuing truth it is still the supreme effort of the investigator to depersonalise himself—so that the candid recognition of facts and the putting aside of prejudice or pettiness are at once a surrender to things and the fulfilment of the truth-seeking personality. It is the religion of the 'free' man, who consorts with God on terms which still leave the creature independent according to his finite measure. God is the divine individual, awfully removed from man,

Theism:  
its strength,

values, this is not immanence in the natural sense which pantheism attaches to the conception, that of working in every part of creation. I leave the passage therefore unaltered. Theism, any how, is at least what I describe.

<sup>1</sup> "We may say that God is not God till he has become all in all, and that a God which is all in all is not the God of religion. God is but an aspect, and that must mean an appearance of the Absolute" (*Appearance and Reality*, p. 448).

with a quality which man does not possess, and who yet does not so much engulf as fulfil man, standing by him as a helper and sustaining him as a father. Its speculative weakness has always lain in its detachment of God from the finites in his world, and more particularly from the world of nature. Continuous as God is felt to be with man, his continuity is only felt and not clearly conceived. This continuity is in fact just the element in religion which is pantheistic in its tendency. Most often God is conceived by theism as a creator, existing before the world in his perfection and bringing the world to birth by his will as guided by his intelligence. "The worlds were made by the word of God." But this is understood sometimes in a more obvious, sometimes in a profounder sense. The materials out of which things are made may be supposed to be already in existence, and God shapes them, as in Genesis or the *Timaeus* of Plato. God becomes then an artificer shaping or imposing form upon what is not a part of himself; he is what Kant, speaking of this conception, called aptly but slightly an architect-god.

and weak-  
ness.

On the other hand, if God's word is at the same time the coming into being of the material as well as the form of his creatures; if the theism becomes according to the current phrase an immanent one, we are at a loss to understand how this God, whose acts are his creatures, can also lead an existence separate from them, and can ever have been, as he is supposed to have been, without them. The transcendence and immanence of God are postulated together without reconciliation. Theism endeavours by this device to satisfy the other side of the requirements of religion, its demand for unity of substance of man with God. But the speculative transcendence conflicts with the speculative immanence, when God is understood to be both transcendent and immanent in respect of his whole nature, that is to say, if his deity at once permeates his creatures and transcends them. To come to speculative systems, it is this difficulty which besets the student of Leibniz, for whom God is himself a monad, supreme among the monads, and yet the monads

other than God are created by God and the world as it exists is selected by God out of the infinite possibilities of worlds open to God to create. The monads at once mirror God and are his creations. Thus the so-called immanent theism has never, so far as I know, been clearly distinguished from pantheism; there is always lingering about the conception a suspicion that without much regard for consistency it seeks to combine the religious attraction of theism with the speculative attraction of pantheism. If theism is to contain and include immanence it cannot remain a simple doctrine of creation.

The God of a strict theism is therefore artificially related to his creatures. He is one of a multitude of beings, infinite while they are finite, but does not live their life (as in some sense the pantheistic God does), but remains outside them, ruling them by his power or wise governance or attracting them through love for him. Hence the need that is felt of mediators between the creatures and God which bridge the interval between him and them.<sup>1</sup> God may be conceived embodied in some perfect type of manhood who is at once both human and divine. And if the relation of man with the perfect and unchanging individual God is artificial, still more so is the connection of God with nature. All the perplexities which experience makes us so familiar with of the imperfect subjugation of nature to the purposes of man,<sup>2</sup> arise in respect of the God of theism. The god-man is finite and dies. Even God's control over nature though complete is arbitrary, obeys no principle, and is postulated rather than explained. He binds the sweet influence of the Pleiades; but they are not part of him, and neither do they appear necessitated by him nor he by them. Hence the God of undiluted

<sup>1</sup> But O th' exceeding grace,  
Of highest God, that loves his creatures so,  
And all his workes with mercy doth embrace,  
That blessed angels he sends to and fro,  
To serve to wicked man, to serve his wicked foe.

*Faery Queene*, II. canto viii.

<sup>2</sup> Compare the famous passage in Newman's *Apologia*, ch. v. (ed. 1908): "To consider the world in its length and breadth, etc."

theism becomes merely the greatest thing in a universe of things and tends consequently in the mythologising imagination, which the religious sentiment naturally and inevitably employs, to be dowered not with a new and divine quality but with finite qualities on a vaster scale.

Pantheism.

Pantheism, on the other hand, is strong where theism is weak and weak where that is strong. It appeals to the self-surrendering element in the religious mind, but its defect is the difficulty that it offers when strictly understood to the retention of independence or freedom in the attitude of the worshipper. For the individual is lost in God, and the religious feeling of trustful dependence on a greater sympathetic power, which in some types of religion is normal, is either absent or is replaced by mystical ecstasy. "The imperfect offices of prayer and praise" are transcended in the feeling of "blessedness and love." With that unconscious blending of theistic and pantheistic elements by which the western mind saves itself from the speculative fascination of pantheism, Wordsworth describes this feeling as being still a "thanksgiving to the power that made him."<sup>1</sup>

It is characteristic of pantheism that the individual demands no return from God. Spinoza's intellectual love of God is part of the infinite love with which God loves himself, and asks nothing for itself. It was this which recommended it to the mind of Goethe.<sup>2</sup> But not merely does it demand no return in the sense that it seeks no reward; it makes no claim that the individual in his devotion should matter to God or help him to be

<sup>1</sup> In such access of mind, in such high hour  
Of visitation from the living God,  
Thought was not: in enjoyment it expired.  
No thanks he breathed, he proffered no request.  
Rapt into still communion that transcends  
The imperfect offices of prayer and praise,  
His mind was a thanksgiving to the power  
That made him; it was blessedness and love.

*Excursion*, Bk. I.

<sup>2</sup> Goethe refers to Philine's saying to Wilhelm, "Wenn ich dich liebe was geht's dich an?"—"If I love you, what is that to you?"

what he is; and yet this relation is implied in the religious service of the man who is truly free.

One consequence of this characteristic of pantheism is that the transition between God's divinity and human morality is made difficult for reflection. We shall see that deity and goodness are indeed notions of a different kind, but there is at least an intimate connection between them, and reflection may trace this connection. In pantheism the links are neglected or broken. For if everything finite is a mode of God, good and evil are alike contained in him. But it is an old familiar difficulty, that if the evil belongs to God as well as the good he cannot be worshipped, God being at least in the line of what is highest. Hence it is easy to understand why persons who cannot reconcile pure theism with their speculative convictions, and at the same time lack the religious passion which finds its satisfaction in absorption into God, should substitute enthusiastic devotion to goodness for religion proper.

From the speculative point of view, on the other hand, pantheism supplies that unlaboured connection of God and nature and man which theism as such fails satisfactorily to supply. But it does so at the price of merging individuality into the nebulous whole; a speculative defect which lies at the root of its religious insufficiency. This has been expressed in a well-known fashion in the statement that while we can understand upon the pantheistic metaphysics how all things are contained in God, we cannot equally well understand how they proceed from him. It is true that pantheism may stoutly proclaim that absorption in the Absolute leaves the individual self-sufficient and independent so far as that is possible for finite creatures (and therefore not truly or ultimately). Yet in doing so it rather postulates something which human practice requires than is consistent with itself; and it becomes obnoxious to the same reproach as theism when, with a principle of transcendence, theism saves itself for religion by postulating immanence as well.



Is the  
present  
conception  
theistic or  
pantheistic?  
Transcend-  
ence and  
immanence  
of God.

If the question is asked, whether the speculative conception of God or deity which has been advanced here as part of the empirical treatment of Space-Time and has appeared to be verified by religious experience belongs to theism or pantheism, the answer must be that it is not strictly referable to either of them, taken by itself; that in different respects it belongs to both; and that if a choice must be made it is theistic. For God for us is conceived as built on the same pattern as every finite, and as the whole of Space-Time, and of the particular finite which is the human being. He is both body and soul, and his soul is his deity. Since God's body is the whole of Space-Time, God in respect of his body is all inclusive, and all finites are included in him, and in their continuous connection as pieces of Space-Time and linked by spatio-temporal continuity they are fragments of God's body, though their individuality is not lost in it. But in respect of his deity the conception of God is theistic, and since his deity is what is distinctive of him, this notion of God remains predominantly theistic.

Deity according to our conclusion from the empirical order of qualities is an empirical quality and is not *a priori* or categorial; and it does not belong to the whole world, as if every part of that world were permeated with deity, as it must be in a strict pantheism, but only to that part of it (infinite though that part is) which is fitted to carry the empirical quality. In the picture which was drawn, in concession to the mythologising habit, of this infinite being as realised, we had to think of God's deity as carried by some differentiation of the stuff of mind, belonging to a certain portion of the universe. In reality, God is never thus realised in the contradictory form of an infinite qualified individual, but he is in process towards this quality of deity; and if we conceived deity realised in a finite god or angel, deity was finitely extended in space and time. Since then deity is carried only by a portion of the universe, God is so far an individual being just as man or any other finite is, only that he is infinite. But since his distinctive quality is

not mind but the next higher quality, he is not a being on the level of man, with personality and mental powers like man's, raised only to a higher pitch, but transcends all finites, because he is the whole world as tending to a higher order of finites. In this, which is the more important respect, the conception is theistic.

On the other hand, though he transcends all finites in quality, his deity remains within the world and he is in no sense outside it. Yet his deity is not localised in any special class of finites, as they suppose who treat a theistic God as also immanent because they find God in the region of values. Since his deity depends on mind, and this in turn on finites of a lower order, until ultimately we reach the simple matrix of Space-Time; there is no part of the universe which is not used up to sustain the deity of God. Everything in the world is represented (in the physiological sense of that term) in his deity, and we and all finites are, in the phrase we have used, comparable to organic *sensa* which God contemplates in enjoying his deity. Once again the theistic dualism of a God whose deity is compresent, whose divine enjoyments are compresent, with the things which are his objects, reappears. But all these things are part of his body and belong to himself. He possesses therefore the totality which pantheism assigns to God. But while, as above observed, the finites which are included in his body are not lost or absorbed therein, so as to lose their identity, there is an intelligible connection between these finites and his deity,—the connection which pantheism finds so difficult to make clear. For his deity is the outgrowth in Time of the preceding qualities of existence as contained within Space-Time, and while his deity is fed by lower finites, he himself not only transcends them in quality but, including them all within his body and representing in his deity the goal of their efforts, releases them from their isolation as individuals and sustains them and gives them a significance which as mere individuals they do not possess.

God is thus immanent in a different respect from



that in which he is transcendent. The phrase immanent theism seems to me to cover so much obscurity of thinking that I prefer to avoid it altogether. Theism and pantheism, transcendence and immanence are two extremes of thought about the divine. They are rarely found in complete purity, but are combined in practical religious beliefs in various proportions. They represent the two essential characters which God shares with all other things and with Space-Time itself, of being both body and soul. God is immanent in respect of his body, but transcendent in respect of his deity.

Reflective  
notions of  
religion.

We may now revert to the religious consciousness itself. Though our conception satisfies that consciousness, it seems to contain features incompatible with the philosophical or rather theological and traditional or conventional formulae which are inevitably mingled with the unreflective deliverances of religious feeling. Hence it was better to test our metaphysical conception in the first instance without reference to these other notions. But we may now ask ourselves two questions which the current reflective theism would answer affirmatively: Is God a creator? and the second question, which has already been answered, Is God in Space and Time or beyond them, so that he exists independently of the process in Time? In comparing the speculative answers to these questions we have only to remember that while the immediate deliverances of the religious emotion as to what it feels are data for science, the same value cannot be set on its semi-speculative conceptions about these data. The plain man's attempts at a theory of his experiences have indeed a certain value just because they are attempts at a theory. But they are not entitled to particular respect because they are the plain man's beliefs. Thus, if a man tells me his God is terrible and demands the sacrifice of children to appease him, I know what he means by God, what kind of an object it is which satisfies his religious need. Or if he tells me that God is the father in whom he trusts and on whom he leans, I know what

he means by God. But if he tells me that God existed before the world and created it in so many days in a certain order, I recognise here only attempts to formulate in scientific terms his conception of the relation of God to the universe. Such attempts may vary in value from the crudest imaginations of mythology to the profoundest doctrines of theology. Moreover, these theories are affected in all manner of ways by tradition and even by customs which may have survived when their religious meaning has been sublimated. At any rate they are theories about God, not facts about what God is felt to be, facts comparable to the green which we see in leaves or to the fragrance of mignonette. In the same way it is of the last importance to know men wish to be immortal, and why they wish it, that they may be reunited with those they love, that they may have the opportunity of growing better, that their life and its work and happiness may not be snapped off, and the like. But it is of comparatively little importance to know that they think their soul must be immortal because it is immaterial. Thus a metaphysical theory, we may be prepared to find, may satisfy religious feeling and yet not altogether satisfy the current reflective conceptions about God; and at the same time we may find that in spite of this it may offer a better hope of solution of some of the practical difficulties of the religious mind.

Turning then to the first question, whether God is a creator, we must say that as being the whole universe God is creative, but his distinctive character of deity is not creative but created. As embracing the whole of Space-Time he is creative; because Time is the moving principle that brings out that constant redistribution in the matrix which is equivalent to the birth of finite forms. Even then it is, properly speaking, Space-Time itself which is the creator and not God. The body of God includes all the finites which have hitherto been evolved in the lapse of time, and what God is creative of is not these finites but the next empirical quality of deity. It is only when we look back and identify God's body with its previous stages and ultimately with Space-

Is God  
creative?

Time itself that we can speak of him as a creator. God himself, that is the universe as tending to deity, is creative only of deity. On the other hand, deity owes its being to the pre-existing finites with their empirical qualities, and is their outcome. God then, like all things in the universe—for Space-Time itself is not in the universe, whereas God, since his deity is a part of the universe, is in it—is in the strictest sense not a creator but a creature. I need hardly say I do not mean that he is a creature of our imagination or of our thought. He is an infinite creature of the universe of Space-Time.

God's  
fatherhood.

It was this generation of deity from lower stages of existence that made intelligible to us the mutual responsiveness of man and God which religion demands. On the one hand, we finites reach out to God, who is the goal of our desire; on the other hand, God who is sustained by us<sup>1</sup> meets us with support and the "solution of our uneasiness." Worship is co-operation; and if our sentiment proceeds from a conation adapted to the universe in its forward tendency, God in his turn is adapted to that conation and satisfies it, and it is as satisfying it that we discover his deity. But if this were the whole case the fatherhood of God, though it would describe the relation of love between the two parties to the religious transaction, would be a singularly inappropriate expression of God's relation to us. It becomes appropriate when we reflect that God's deity is sustained by the whole world, and that the contribution of the individual to it is infinitesimal. Our dependence on God, which partly makes us think of him under the figure of a father, is our sense of how God gathers up for us in his person the whole infinite world to which we belong, so that in trusting ourselves to his divinity we are aware of our continuity with the whole in its divine quality. This is the meaning which may be

<sup>1</sup> Cp. the lines of the song to Italy sung by Vittoria, in Meredith's novel, in the theatre at Milan:

"You dedicate your lives  
To her, and you will be  
The food on which she thrives,  
Till her great day arrives."

attached to such phrases as being lifted up in the arms of God or lying in Abraham's bosom. It is the sense of resolution into this infinite deity, which represents the whole, that lies at the basis of such ideas (I speak diffidently as wholly deficient in theology) as grace and redemption or forgiveness of sins. At any rate it is this mysterious largeness of sustainment in virtue of which God is felt as a father where he is so felt. It is not with any glance at the order of generation, or if this is so, it is either a pictorial representation or a naïve reflective theory. When we think of God as that to which all things owe their existence we are reversing the order of fact and are regarding the universe of Space-Time, which does create all things, in the light of its highest empirical quality, which is not first but last in the order of generation. The notion of a creator God is a hybrid blending of the creative Space-Time with the created deity. It searches for deity by a backward instead of a forward view. Accordingly, in its relation to conduct, religion does not so much command us to perform our duties with the consciousness that they are the commands of God, as rather it is religion to do our duty with the consciousness of helping to create his deity.

The question whether God is in Time or out of it has been answered explicitly, and is answered implicitly by the whole tenor of the inquiry. God's body is not spaceless nor timeless, for it is Space-Time itself. His deity is located in an infinite portion of Space-Time, and it is in fact essentially in process and caught in the general movement of Time.

God's  
supposed  
timeless-  
ness;

The supposed timelessness of God is responsible for certain difficulties in ordinary theism as soon as it becomes a little reflective. For God is for it a being, not caught in the machinery of the world, but a spectator who directs from without. The religious consciousness is always troubled with the spectacle of apparently futile suffering endured perhaps by the just. If God precedes the world (to use a useful but inexact phrase) and all things are determined by his will, why should a benevolent being not take a course which spares his creatures pain?

its diffi-  
culties for  
theism;

The atheistic or anti-theistic chorus in *Atalanta in Calydon* ("All we are against thee, against thee, O God, most high") is a classical expression of the human revolt against these unintelligible miseries. The believer can only shut his door against reflection: "He hath made man thus and he doeth right." The struggle for mastery between two ideals of civilisation has been carried on before our eyes at the cost of endless sacrifice of precious lives which might we must think have made the world better and accelerated knowledge. For those who have lived in the midst of this disaster, however much illumined on either side by the most exalted and conflicting hopes, how is it possible to rest content with the idea of a God who does not share these vicissitudes of his creatures but suffers them to exist? The case is changed if deity itself is the outcome of the world's movement and in particular, to the extent of their value, of the efforts of human beings. It is not God then who allows the struggle, but the struggle which is to determine, it may be not at once but in the end, what deity is to be; which ideal if either is on the side of the divine. God is then not responsible for the miseries endured in working out his providence, but rather we are responsible for our acts, seeing that on the issue of them depends in their measure the character of God. Nor is it otherwise than natural that men so engaged should send up their prayers to a God whom they suppose to be already in being and to favour their particular ideals. They embody the forecast of what they hope in a present form. The God they pray to is the God to whose nature they contribute, but the call of their ideal is the call of the universe as a whole as it appeals to them. God may be conceived as a being liberated from the course of events only because his deity is the tendency of the whole world towards which the individual goes out in religion as he conceives the outcome of that tendency. A created deity makes our human position more serious but frees it from the reproach of subjection to arbitrary providence.

Not only is the supposed timelessness of God

accountable for these obvious perplexities of the theistic religious mind in its reflective moods; it accounts also for the purely speculative difficulties of pantheism which we have mentioned before. For Spinoza, for instance, infinite Space is an attribute of God, and Extension is part of God's constitution. But the other attribute which our minds can know of God is not Time but Thought. Hence since Time is not an essential part of God's constitution, no satisfactory account can be given of how finite things come into existence. We understand why they are resolved into God but not how they issue from him. God is the reason or ground of finite things, but causality in the proper sense which requires Time subsists only in the concatenation of finite things with one another, not in their relation to God. Whereas if in this scheme we substitute Time for mind, the world of finites arises out of the mere restlessness of Space-Time. Mind then becomes nothing but a finite of a particular empirical rank. It is true also that the God or Substance which is Space-Time ceases also to be the object of worship—that is, ceases as such with mere attributes of Space and Time to be God. He needs the empirical quality of deity. The extent of such modifications shows how much a great speculative system like Spinoza's is disturbed by the alteration of a single item.<sup>1</sup>

<sup>1</sup> Perhaps the reader will allow me to suggest to him to consider two other illustrations of this truth. Let him in the doctrine of the Platonic *Timaeus* introduce Time into the Space of which things are made by the Creator. Or let him take Kant's conception of a pure manifold of intuition, and consider what changes are made in it if Space and Time cease to be contributions of the mind and forms of sense but are constituents, *a priori* constituents, of things.

## CHAPTER III

### DEITY AND VALUE

The  
approach to  
deity.

RELIGION as a sentiment is thus the sense of outgoing to the whole universe in its process towards the quality of deity ; and just as Space is apprehended by intuition, sensible qualities by sensation, universals by thought, and values by appreciation, so God is apprehended cognitively through the religious emotion by the assurance we call religious faith. However many other elements gather around it and swell the full tide of the religious sentiment, its essential constituent is something with a unique flavour of its own, corresponding to its specific object, and is distinct from other emotions, and its apprehension of its object distinct from other kinds of apprehension.

But the approach to God may be made in various ways : through the phenomena of nature, through the pursuit of truth, through art, or through morality. Being one function of human nature, the religious sentiment does not exist in isolation from the rest, but is blended and interwoven with them ; and all our experiences may in their various degrees be schoolmasters to teach us the reality of God. In its primitive form it is the religious sense of awe which is felt in the presence of natural powers. No irreverence is implied in asserting that in its elementary character it is less closely allied to morality than to the uneasiness or sensitiveness which all persons feel in some degree, and some in a more pronounced degree, in the presence of natural mysterious occurrences ; like the presentiment of a coming storm,

the sensitiveness which some persons feel to the electric condition of the atmosphere,<sup>1</sup> the depression or exaltation of feeling with the climate, or that sense which Goethe, according to his biographer, professed to have, and which he called the "telluric" sense, of disturbances taking place somewhere in the world. In his case it was a feeling which occurred at the same time as an earthquake was afterwards reported to have taken place in Messina.<sup>2</sup> The universe in its nisus towards deity acts on the mind in a manner more closely allied to the affections produced by purely physical conditions than to the feeling of goodness or beauty. Though fear of the thunderstorm is not itself religion, it may be the occasion of it, and at least a person who takes refuge in uncontrollable panic from a thunderstorm may with as good right be said to be hiding himself from the face of God, as one who is oppressed with the consciousness of sin. Or it may be through aesthetic contemplation that the religious sentiment is first evoked.<sup>3</sup> Music and the other arts have generally formed a part of religious ritual. Or science, which, if it brings us knowledge, brings us to the limits of knowledge, may impress on the investigator's mind

<sup>1</sup> These moods are real enough with many people, no matter how much Dr. Johnson pooh-poohed them. He had, says Boswell, till very near his death a contempt for the notion that the weather affects the human frame (ii. p. 352, ed. Birkbeck Hill, April 14, 1775). "This distinction of seasons is produced only by imagination operating on luxury" (quoted from *Idler*, i. 338). "I never felt any difference upon myself from eating one thing rather than another, nor from one kind of weather rather than another. There are people, I believe, who feel a difference. But I am not one of them" (iii. 305). There is, as I understand, very good explanation of these affections in the condition of the atmosphere at the earth's surface.

<sup>2</sup> *Conversations with Eckermann* (Nov. 13, 1823, Eng. transl. p. 36. Bohn's edit.).

<sup>3</sup> *Confessions of a Convert* (R. H. Benson), I. § 4, p. 23. "I began to go to communion every week and to attend any other services that I could possibly manage—sometimes in the organ-loft, watching the mysteries of the keys and stops, sometimes sitting in the stalls. I did not in the least appreciate the sermons, though I was vaguely affected by Canon Liddon. It was the music first and last, and it was through that opening that I first began to catch glimpses of the spiritual world ; and my sense of worship was further developed by an absolute passion that I conceived for Mr. Shorthouse's book, *John Inglesant*."



the vast beyond which is unknown, so that he feels like a child gathering pebbles on the sea-shore.

Religion  
and  
conduct.

Undoubtedly it is conduct which affords the readiest approach to religion in any mind removed from the primitive. Moreover, even in the primitive mind, religion is so linked with social observances that these are part of its ritual. Custom is from the beginning hallowed. As civilisation grows, ritual observance comes to be separated from morality, and the performance of religious observances a part of the moral law. At the same time moral laws retain for the mind their ancient connection with religion and are thought of as ordinances of God. Religion and morality are not at first distinguished from one another, but are differentiated later. Just in the same way the separate branches of science do not exist for early thought, but, as in the history of Greek science, there is but one science which is philosophy, and from this the special sciences gradually get singled out, while they still carry with them a fringe of metaphysics which they retain to this day. Moreover, there is another reason for the intimacy of connection between religion and morality. For religion is not a merely personal feeling, which exists "in the sanctuary of the heart" but is communal. Like conduct, it binds the community together in divine observances and it has from the outset an institutional character. This raises questions of the distinction of religious community from morality which may be deferred for a moment.<sup>1</sup> But they are doubtless right who dwell on the strength of this element; by which, for instance, the Roman Catholic church has always profited. The late J. Royce even maintains that the explicit recognition of such community was Paul's distinctive contribution to the religious life.<sup>2</sup> The inter-relation therefore of religion and morality is of the closest.

But though religion and morality begin with union and religion always envelops conduct, the sentiment of

<sup>1</sup> Below, p. 411.

<sup>2</sup> *The Problem of Christianity* (New York, 1914).

religion and the sense of moral value are distinct, in a far greater degree than philosophy is distinct from physics which was separated out of philosophy. If further proof of their distinctness were needed than is found in the varieties of approach to religion, it may be found in the paradox that the religious sense may exist in an intense form in a mind which has no special feeling for goodness, and even in downright bad characters or people who have no conscience at all.<sup>1</sup> We call such persons hypocrites, because their life seems incompatible with their religion, which we think of as also commanding goodness. We entertain a natural suspicion of a sentiment which seeks nothing but its own satisfaction, without colouring the rest of our lives. Yet there is no good reason to doubt the sincerity and strength of the feeling towards God which they have. Fraud and *tartuferie* may account for some of those cases, but not for all. *Per contra*, it is common enough to find virtuous persons who are deity-blind. Their case is not the average one, because for the reasons mentioned above good conduct is a normal avenue to religion. Yet they exist not seldom. Since experience then shows that there may be religion without virtue, and virtue without religion, we conclude that, however closely related, the two sentiments, that for deity and that for goodness, are distinct.

It appears then to be a mistake both in respect of fact and in speculation to regard religion as in some way an outgrowth from morality. The religious emotion is as unique and self-sufficient as hungry appetite or love. "The existence of the religious feeling is only possible on the presupposition that men have experienced life, truth, beauty, and goodness. The religious feeling comes into operation when these values are compared with actual reality." The over-emphasis which Mr. Höffding, from whose book these words are quoted,<sup>2</sup> lays on the secondary character of religion in relation to goodness among other values is, I believe, a real defect

Religion  
not an  
outgrowth  
from  
morality.

<sup>1</sup> "Johnson: A wicked fellow is the most pious when he takes to it. He'll beat you all at piety" (*Boswell*, iv. p. 289, June 1784).

<sup>2</sup> *Philosophy of Religion*, p. 113.

of that admirable work.<sup>1</sup> According to other conceptions religion arises at the limits of morality. "Morality," says Mr. Bradley, "is led beyond itself into a higher form of goodness. It ends in what we may call religion."<sup>2</sup> "It is a moral duty not to be moral,"<sup>3</sup> runs the paradox, and this is "the duty to be religious."<sup>4</sup> We might equally well say that it is a scientific duty to be unscientific, and that that is the duty to be religious; and indeed a great number of persons would welcome such a solution of the supposed conflict of science and religion. They would take it to mean that science herself proclaims that there is something beyond what falls under the purview of science. Whereas if there is to be, I will not say a reconciliation of science and religion, for that would be an admission that there ever could be a quarrel, but I will say a harmonious connection between science and religion, it must be by the simple recognition that there is a fact or tendency, that of deity, which is beyond natural or human qualities and yet empirical, and that this fact is itself included in science in the fullest sense of that term as the methodical pursuit of knowledge.

In the same way the duty to be religious cannot be a duty not to be moral. There is in fact no duty to be religious any more than there is a duty to be hungry.<sup>5</sup> The religious sentiment arises from a brute or crude instinct, or if the fitness of the term instinct be questioned, a brute conation of human nature. I mean by calling it a brute instinct not that it is on the level of bodily instincts, for it is the highest we possess in so far as it aims at the most perfect object; but only that it is given in our constitution, and that it is not, as it were, something which needs morality or art to reveal to us, but, on the

<sup>1</sup> "Religious judgments therefore are secondary judgments of value; in comparison with the primary judgments of value in which the first two groups of values find expression, they are derivative" (*ib.* p. 107). The two groups of values are, those connected with self-assertion, and the moral, intellectual, and aesthetic values.

<sup>2</sup> *Appearance and Reality*, p. 438.

<sup>3</sup> *Ibid.* p. 436.

<sup>4</sup> *Ibid.* p. 441.

<sup>5</sup> There is not even a duty to eat, but only to eat neither too much nor too little.

contrary, is merely stimulated to action through these among other means. The only reasonable sense in which there is a duty to be religious is that the instinct should be gratified, like any other, to the extent to which such satisfaction is compatible with the rest of our nature and the claims of others; that consequently we may have duties of religious observances towards others with whom we are united in a community of worship, a duty of letting other persons alone if they differ from our own religious beliefs or have none, and a duty of recognising in the case of persons specially gifted for religion a special function in society which is their contribution to the good of it, just as we recognise special functions in those who are gifted for art or science. But all such religious duty is not a duty not to be moral but, on the contrary, part of moral duty, which includes the tendency towards God as one of the emotions which may be subject to social regulation.

"Like love, like wrath, like hope, ambition, jealousy, like every other instinctive eagerness and impulse," says James of religion, in a striking passage, "it adds to life an enchantment which is not rationally or logically deducible from anything else. . . . If religion is to mean anything definite for us, it seems to me we ought to take it as meaning this added dimension of emotion, this enthusiastic temper of espousal, in regions where morality strictly so called can only bow the head and acquiesce."<sup>1</sup> Hence it is that in our experience the sense of religion is distinguishable from the enthusiasm and passion with which we may regard nature, or beauty, or morality, or truth. These passions may be happiness enough in the lives of some and serve them in place of religion, but they are not the religious passion and only simulate it.<sup>2</sup> Morality may be penetrated with religion, but by itself is not a substitute for it. In other words, were it not for the brute sentiment for deity we should never arrive at religion from thinking of the problems

<sup>1</sup> *Varieties of Religious Experience*, p. 48.

<sup>2</sup> Those admirable institutions, the Ethical Societies, do not for that reason seem to me to supply a really adequate solution of the problem.

that arise in our moral life. On the other hand, the passion for deity being there, it seizes on the moral and other values, treats them as conditions to the enjoyment of itself, and offers a solution of the problems which they present. Hence, since all human interests are interwoven, it is no wonder if religion reinforces morality, and if the men of experience and insight are perhaps in the right who say that but for the sanctions of religion men would be even less virtuous than they are. And in its turn, the consciousness of right doing may become itself religious and that of wrong doing take on the colour of sinfulness, and further than that, however much we may strive to do good and the more we do so, the more acute and lively may become the sense of our failing, not in the eyes of men, but of the being in front of us, towards whom our brute instinct impels us.

Deity and  
goodness.

The sense of deity having thus been described as in its fundamental character a feeling of our going out towards the world in a new and higher quality than that of mind or any of the tertiary qualities which have been called values, I must attempt to explain the relation of deity to value, and in particular to goodness which is our practical value, and in that sense the highest human value since good conduct takes in all our tendencies, including even the religious one. I shall try to show that deity, though not equivalent to goodness, is on the side of goodness. In a striking formula Mr. Höffding has defined religion as the faith in the conservation of values. God is the principle of that conservation, and religious feeling is felt in the comparison of value with reality. My criticism of this conception is not that it is untrue, for it is true and of the highest importance, but that it is too reflective and describes rather something which is true of religion than what religion is. The faith of religion was, as we saw, a faith in the existence of deity, not in the conservation of value ; and we do not need a faith in the conservation of valuable existence to tell us that we are sustained by something greater than ourselves, for this is an immediate consciousness evoked in our preadapted

nature by the world of reality itself. But inquiry into this object of faith, God, does show us that deity is in the line of value ; and I find myself regretfully expressing dissent from this writer, while seeming to say the same thing, on the ground that he appears to me to do less than justice to the immediately felt reality of God. I shall use value in the more restricted sense of the tertiary qualities, rather than his more general sense of anything that brings satisfaction.

In the first place deity is not itself a value, for values are human inventions and deity is ultra-human. Deity belongs to the order of perfection and not to that of value. It may be well to recall how these conceptions differ. Value is contrasted with unvalue ; goodness with evil. But perfection is a notion based on the empirical fact that there are various types of good life, comparable, as we saw, to the various types of successful animals or plants, which can be arranged in their order of complexity or development. For example, there is a primitive type of social life with its corresponding individual virtues which satisfies the social needs of man under elementary conditions ; which, for instance, respects life within a family or tribe, keeps faith within defined limits, allows of marriage within certain degrees of affinity determined by rules. Here we have an organisation of simple needs which to us appears so crude, because while on the one hand it includes so little, on the other hand it runs into such complex detail, as in the marriage laws described by Messrs. Spencer and Gillen among certain native tribes of South Australia. Proceeding a stage higher to a semi-barbarous civilisation like that of ancient Greece, we find a code much more advanced, governed by the principle of social life within a city-state, but still bearing traces of its proximity to early notions in being a rule of custom or status. In contrast with it, the moral type of the modern man, affected as it is so largely by Christian conceptions, appears free and, in Kant's language, self-legislative ; though it is as important not to exaggerate the contrast as not to ignore it. At any rate the type of the free individual is more developed or perfect than the

Deity not a  
value but a  
quality.

type of custom, and it implies, as Green showed, a greater extension in the range of persons to whom duties are owing and a completer organisation of the moral life. Again amongst men of the same age there are national distinctions of moral type, and of these we cannot or may not be able to say that any one of them is bad, but only that one may be more perfect than another, or that they are equally perfect. The idea of perfection is founded on these differences of development. But while there are grades of perfection, there are not grades of value. Value is at any stage the distinction between what on that level is fitting and what is defeated in the contrast or struggle with it.

Deity belongs to the order of perfection. It is a quality, and God who possesses it is a being on a higher level of existence in the nature of things. The order of the empirical qualities is one of perfection, and values are evolved within the level of mind, and indeed with proper qualifications within every level. God is for us the highest being in the universe, but he cannot be called the highest value, for there is no unvalue with which he can be contrasted. As the universe flowering into deity, God has no rival, just as on the level of mind there is no such quality as *unmind*. It is only when deity is realised and actual and there are finite deities, that value may arise amongst these gods or angels. Satan and his fellows are bad angels, who misconduct themselves angelically; their deising breaks the rules of the angelic game. There is a good speculative meaning in this fancy, for value breaks out wherever there is finite existence of however high a level. But if deity is realised, we have passed beyond the conception of actual God, the infinite world tending to deity; and God for the angels is an infinite being still transcending them in quality.

It is a tempting hypothesis to construe God in terms of value, and, neglecting his characteristic quality of deity, to think of him as representing in the universe the line of values, from subhuman 'values' upwards. He would then be the linked succession of types, varying in their perfection, which have demonstrated their value whether

in the natural or the human world by defeating their rivals, the line of values as distinct from the chaos of unvalues. This Manichaeian conception divides the universe between good and evil, between God and Devil. Tempting as the conception is, it will not bear examination. It allows indeed for the intimate connection of God with goodness in all its stages. But it destroys the connection of God with the totality of things. Moreover, there is no such clear-cut continuity in values as is here supposed. For a higher value may make use of what on a lower level is unvalue. God may use Satan to his own purposes. Elements emerge from the chaos of evil and are built up into good, as crops are nourished by excrement, or as one animal type may feed on the weaklings of a lower type which are not swift enough to escape. If the whole universe is, according to our conception, the body of God, this difficulty does not arise, for evil and good are present there together.

Mention has been made above of the communal or institutional element in religion, and it might seem as if in separating religion from morality, and refusing to rank religion with values, I was contradicting myself. But the community which is established by religion is of a different sort from the moral community. The moral community is an organisation of individuals who, though they have in general similar needs, differ from each other in all manner of ways, not merely in the degree in which they feel these needs, but in their fitness for the performance of tasks useful to the society. Hence even in the simplest social communities, the problem of morality is to secure such a distribution of satisfactions as shall make the society happiest and most efficient. If good conduct consisted merely in a general observance of certain rules equally general—be temperate, be brave, be truthful, and the like—it would be far easier of attainment than it is. What matters is the discovery of how much and what each individual is to do according to his instincts and appetites in order to be temperate, truthful, brave, and the like. However much the broad lines of conduct

The communal element in religion.



agree for all individuals, each of them is different from the rest, and each according to his place has a particular contribution to make to the common good. Now religious community is not an organisation of differing individuals so much as a union of them to support and sustain each other in an identical service. It is comparable to the gathering of persons together for meals, and indeed this conception of convivial assembly plays an important part in many religions, and religion has, I believe, been thought by some to arise out of such gatherings. Though religion does not exist only "in the sanctuary of the heart," the community is still one of individuals as "congregated in that personal capacity." In the famous passage from which I am quoting,<sup>1</sup> Burke goes on to speak of religious observances by individuals in their corporate capacity as members of a civil society, where religion has been recognised as one of the expressions of social sentiment and has received its place in the national life. But in the merely religious congregation which is the foundation of institutions of religion, there is common worship but there is not the mutual criticism which organises men into a moral society. There is of course, however, organisation in religious institutions when different parts are allotted to persons in a religious community, in the distinction of laity and clergy and of clerical hierarchy, and specific moral obligations may arise within the congregation out of this, just as in a convivial gathering there may a host or a symposiarch.

Deity on  
the side of  
goodness.

The question whether deity is or includes goodness, and the commoner question whether God is good, have now been answered. Deity is a type of perfection transcending human goodness (or truth or beauty), and any lower form of valuable life and different in its quality. To call God himself good is, if we think of his deity, a wholly inadequate designation, only legitimate because we use human terms and mean by it that God is the highest perfection. On the other hand, if we are thinking of him as the whole world with a soul of deity he is neither

<sup>1</sup> *French Revolution*, p. 115 (ed. Payne, Oxford, 1877).

good nor evil, for in his body he includes both. This, as we saw, was one of the reasons why a pantheistic God fails of satisfying the religious mind. But though as deity God is beyond good and evil, his deity is on the side of goodness. For goodness, whether we are considering the human values or the subhuman values, is the character of the permanent as opposed to the impermanent contrasted evil. The universe works in experience so as to secure the survival of good, or rather that which survives in the long run in the contest establishes its value thereby and is good. To repeat a saying already quoted, "morality is the nature of things." The history by which new types of finites come into existence is, we have seen, the natural history of values.

Now the victory of the lower type which is good makes possible the rise of its successor on the higher level. The higher lives by making use of its predecessors, and so the succession of types presents the appearance, when we use human analogies, of having been arranged or designed by some superior power for the sake of its highest type. Space-Time itself, by virtue of its own *nisus*, elaborates without forethought a "hierarchy of ministration" which if it were produced by mind would imply a vast and all-wise forethought or providence. If we apply to the new quality of deity what we learn from the succession of lower empirical qualities, we conclude by analogy that the process by which good overcomes evil in the region of mind is one of the conditions of the emergence of deity; so far, that is, as human endeavour contributes to the generation of this quality. Thus goodness or good will is material on which deity is built, and deity is in the line of goodness not of evil. Or we may put the matter otherwise thus, still following the biological and moral precedents. Good will and each lower form of 'goodness' are types adapted to the world under the conditions of which their existence is carried on. Such adaptation carries with it the victory over ill-adapted types, which are evil. Deity is the distinctive quality of the higher type of perfection in this line of forms.

It will be answered that, after all, evil exists, and

since the world is the body of God, evil cannot be dismissed from the nature of God. But the assertion we have made is not that evil does not exist in God—on the contrary it has been maintained to exist there, in God's body—but only that God's deity is on the side of good and not on the side of evil. The reason why this conception, difficult as it is, is necessary, is that God is infinite, whereas the beings in the struggle and contrast between which the distinction of good and bad and all other values is born are finite. Consequently the finite being, whether merely living body, or conscious one, or society, is distinct in space and time from or external to its rivals; or in so far as it is healthy puts away from itself its disused or dead parts, or protects itself against disease by inflammation and the destruction of the noxious element. There is a Space outside into which these excrements can be discharged and maintain an independent existence. But since God is infinite there is no extrusion possible beyond his limits; there is no Space outside him.

Comparison  
with life.

We may for clearness and fulness put the case thus, still preserving our imaginative figure of an infinite being with infinite deity existing in it, though we know that his deity is a tendency rather than an achievement. Deity in the universe as a whole is like life in a healthy body. Life is equivalent to a certain portion or constellation of the material processes which make up the whole body, the remainder being not living processes and yet essentially subserving the living portion of them. Now life means also the continual death of parts of the body and the exclusion of material which is no longer utilisable in that form. All living involves partial death. But the life resides not in the disused elements but in the parts which remain and are active. Life, then, is on the side of material elements in the body which are organic to it. In the same way it not only excretes and gets rid of useless material, as in the excrement of food, but it rids itself of poisons which its own functions generate, clearing the blood and the muscles by expiration and transpiration; and so far as its powers extend it makes

disease innocuous. So too the individual mind suppresses or diverts unhealthy activities and the society reforms or at need suppresses its unhealthy members.

In the same sense, deity is on the side of that which it uses, or so far as it is utilisable, and not on the side of that which it discards. If we consider deity in its relation to its immediately lower level of mental existence, we shall think of it as equivalent to some form of goodness (that is of permanent mental, not necessarily human, life) and sustained by other kinds of mental process just as mind is equivalent to certain vital processes and is sustained by others. Thus the maintenance of the life of deity means also the death or discarding of certain parts of its basis, that is, certain forms of mental life. Now in the case of the finite the discarded material is ejected outside itself and goes on existing elsewhere. But since the mental existence which is discarded in the life of deity is retained in the body of God, and cannot go on existing independently outside him, it must be regarded as that kind of mental existence which, as such, that is, in the form which it now possesses, is impermanent. That is to say, it is the evil mental life, which does not maintain itself in the struggle with good, but passes into lower forms. The material excreted from a finite living body, *e.g.* carbonic acid, is still material which may persist, and it is not bad material. But the 'material' which deity discards cannot persist as such, cannot be good mental life, or it would be used up to sustain deity. It suffers therefore dissolution in its character of mental existence, and can be used again only when it has been "unmade to be remade,"<sup>1</sup> and may again be taken up and utilised for the purposes of deity; as the corruption of a battlefield may serve the growth of crops and ultimately be made serviceable for good human life. Thus both in the case of the finite and the infinite being, there is an internal selection which results in the creation of waste products. But whereas in the case of finites the waste is not the evil of the lower stage, but only material which is not utilisable for the higher stage; in the case

<sup>1</sup> Adapted from Browning; see below, p. 420, note.

of the infinite divine being, the waste is equivalent to the evil of the lower stage.

Faith in  
the con-  
servation of  
value.

What has been said here more particularly with regard to goodness applies also to the other human values of truth and beauty. Good in all of these directions is directly utilisable for the life of deity, while evil appears as that which deity discards, which accordingly needs transformation before it can be utilised. Since deity is equivalent to some complex of mind, just as mind is equivalent to some complex of life, deity is not only the next higher quality to mind, but grows out of mind and out of valuable mental life, for this is the mental life which is permanent and can give rise to higher existence. Deity is in the line of mental values and grows out of them. But human values are only one example of value, a notion which essentially marks the fitness of what is valuable to persist in the one reality of things, or, as it was put before, the return of the isolated finite into communion with reality. In this wider sense of value, deity remains next to mental and even human values, but it is also in the line of all value, and our values are but its proximate material. In this sense deity represents the conservation of all values or valuable existence whatever, and is an outgrowth from them. All values are conserved in God's deity.

Religion as  
faith in  
deity.

Important as this proposition is, it does not entitle us to say that religion is faith in the conservation of value. Religion is faith in deity, or in God with the quality of deity; and deity, when we come to make reflection upon it, is seen to be in the line of value. But the religious sense is something more primitive and crude, and needs to be described as it is actually experienced, not as it is reflected about. I am so anxious not to seem captious, and at the same time to insist that deity is a quality and not a value, that I will linger yet awhile upon the topic. In its essence religious sentiment is not a matter of value or appreciation at all. It is the crude recognition on the part of, a mind that there is something with a distinctive quality above his own distinctive quality of mind.

It is like the apprehension of colour or life, except that we cannot say what the new quality is like, for it is not revealed to sense or thought. We are only sure that it is there. Reflection shows it to be the outcome of our values; but at the same time to be in the line of all value whatever, whether human value or living value or natural value. Deity is even for reflection the conservation not merely of what is precious to us, but of what is precious to itself everywhere.

Hence it is that, though deity is seen on reflection to be born proximately from the human values of truth and goodness and beauty, the sense of it is not the claim for their conservation but something simpler, the sense of a new quality above man, to which the whole world tends. Consequently it may be stirred by other aspects of the world than what are valuable in the eyes of man. The rascal or profligate, to revert to him, who has a sense of religion, is not moved by morality, but is moved by deity. The cruder mind is inspired by the elemental forces of nature, storm and light, or the sun, or life in the trees. For it is not the mere sublimity of the thunder nor the glory of the sun, in their aesthetic value, which stirs him, but the recognition of the godhead to which they tend. These are as much contained in God's body as human beings with their claims for satisfactions. The finite body does but adapt itself to these fundamental powers; but in God's infinite body they are actually contained and are part of his organic life. Deity is the outcome of the onward sweep of all that is persistent and counts in the economy of the world. Human values are but the apex of that movement. Any facet of the advancing column of values may make the directer appeal to the mind, according to its capacity.

The difference and at the same time the connection between deity and value may be expressed in more comprehensive and fundamental terms by reverting to the real nature of value which was recalled a moment ago. The establishment of value and the extirpation of unvalue is the sign of adaptation. Value means in its simplest terms that the individual or type, any function

of which is valuable, is not self-dependent entirely but in its independence belongs to the whole Space-Time of which it is a complex. Unvalues are indeed realities, but in their unvaluable form do not fit in with the world of empirical things generated within the whole Space-Time and cannot therefore persist in the measure assigned empirically to their kind. There would be value if the *nisus* in Space-Time stopped or could be imagined stopping, say at mind. Now the hierarchy of qualities arises out of the restlessness of Space-Time and depends therefore on a different fundamental feature from value. At the same time, since value is the persistent type of existence, it is only in so far as value is established that the *nisus* forward becomes effective in the generation of a new quality. Every being has value or unvalue as part of the whole Space-Time; it has the *nisus* to a higher form in so far as it contributes to the general *nisus* of the world. Thus to take our human case, we are good in so far as we cease to be isolated, for "morality is the nature of things." We help to the creation of deity in so far as through our goodness we are qualified to share in the universal bent towards a higher quality.

There is a further consequence of the difference between deity as a quality in the hierarchy of qualities and the idea of value. Good and great men seem to us to have in them something divine, and the description is just if it is taken to mean that, being better and greater than the rest of us, they point the way to deity, and prepare the way as leaders in the human contribution to the world-endeavour. Even God himself does not as actual God possess deity attained, but only the *nisus* towards it. Men of transcendent gifts of perfection are thus in their degree exemplars of this *nisus*. The description is false if it means that they in any sense possess the divine quality or even adumbrate it. Deity on such conception would be no more than the perfection of manhood, whereas it is something which transcends in kind the most transcendent manhood. The ordinary theism, therefore, when it postulates a human intermediary between us and a God who is conceived as

endowed with deity actually attained, acts consistently in believing the intermediary to be more than man, human and divine at once—purchasing consistency at the cost of interposing the conception of a miraculous person without parallel in the world.

Value is in the above sense conserved in deity. But withal we have to recognise that, not in deity, but in God, unvalues also are contained; not merely badness and ugliness and error but in the end all impermanent forms of finite existence. At the same time this recognition secures a better understanding of the place of evil. For since God's deity 'represents' his whole body, evil which forms a part of that body is contemplated by God as a part of that body on which also his deity, in which there is no evil, is based; and secondly, evil is implicated in the life of his deity, since all life carries with it death. Though God's deity is in the line of value, it involves evil as well as good in its substructure. Evil is, therefore, redeemed as part of God's being, of the matter of him. And since the whole of his body supports his deity, what is evil from the point of view of the lower or material level (the human level) undergoes change so as to support the divine. On the human level, only such transformation is possible as means reform. The evil which has been done or thought or felt is not undone by reformation.<sup>1</sup> But in being discarded and remade it becomes utilisable for deity. Thus evil is at once a reality and has its finite existence, and by being resolved into the infinite whole out of which it sprang it undergoes alteration into value. This corresponds with what we learnt before as to unvalue, that it is the human and wilful distortion of what is real. Error and ugliness and wickedness are finite realities and remain as such unvalues, in the body of God. But perishing in that form they are used up in a changed form for the purposes of deity. We have here the foundation for reflective religious ideas of ultimate redemption of evil in all its shapes by purgation or other process whereby God "unmakes but to remake

Conservation of evil.

<sup>1</sup> Cp. J. Royce, *Problem of Christianity*, vol. i. pp. 259 ff.



the soul."<sup>1</sup> It remains that deity is neither good nor evil, not a value at all but a new perfection, in which so long as it is infinite and an ideal there is no distinction of values. But God considered as his body contains both evil and good, though as a whole he *is* neither, since terms of value belong only to finites.

The  
problem of  
evil.

I find I have, almost unawares and without intention, been drawn into the ancient problem, as it is called, of the existence of evil, and half tremble at my own audacity. What I venture to add here is that the problem is indeed insoluble either so long as, on the purely pantheistic conception, deity is conceived to animate all parts of the world alike, and not rather that part which in due time is fitted to carry deity; or so long as, in purely theistic doctrines, God is regarded as separate from his world, and existing perfect independently of it, and for imaginative purposes before it. But the problem becomes less of a mystery when Time is conceived to be essential to God, deity and body alike, and when deity is regarded as an outgrowth from lower empirical qualities and succeeding them in time. "Evil, O Glaucon," says Socrates in Plato's dialogue, "will not vanish from the earth." How should it if it is the name of the imperfection through whose defeat the perfect types acquire their value?

Our revolt against the existence of evil appears to me to spring from two sources, a theoretical fault and a defect of temper. The theoretical fault is that of emancipating God from Time. If God allows evil to exist we ask why he did not make the world otherwise. But if God's deity is sustained by our goodness and our evil is what deity discards, we should in asking the question be reversing the order of things. God is

<sup>1</sup> *The Ring and the Book* (the Pope is summing up his sentence on Guido):

"Else I avert my face, nor follow him  
Into that sad, obscure, sequestered state  
Where God unmakes but to remake the soul  
He else made first in vain: which must not be."

ll. 2129-32.

helpless to prevent evil, for his deity is the outgrowth of good, and God does not foresee the evil or the good, but so far as he is equivalent to the whole world is himself the theatre of the contest between value and unvalue. It is just so far as deity is a quality which we project in front of us, and on empirical grounds are justified in so doing, that God helps us to support values, through the direct impact of the whole world in its divine tendency upon our individual minds, or through the corresponding subjective condition of religion and prayer. But no theoretic consideration sustains the belief in a God who precedes his universe. Design we have seen is the effect of Time, successive forms making use of their predecessors and perishing if they cannot. The other evidence of providence, that men's purposes are so often turned to an issue which they have not imagined, proves indeed that men's purposes are finite and that the whole is greater than its parts and may exhibit features beyond their ken, but does not prove a pre-existing<sup>3</sup> overruling purpose. Theoretically, too, it seems to follow, as I have attempted to show, that evil is in a certain manner redeemed and made subservient to deity. Evil has often been likened to a discord which has been resolved. It must be added that both such discord and the passage in which it occurs are alike music. But there is no resolution of the discord which is evil and unmusical on the level on which good and evil both exist. The resolution, so far as it is effected, is effected on the higher level. The evil remains done, but by perishing in its evil form it may subserve deity. The discord remains a discord, but there is no discord in the higher quality, which it subserves but does not enter into as an ingredient. I need not do more than refer to what was said before of the difference between this new quality and some form of spirit such as is assumed on the hypothesis of the current idealism.

The defect of temper which I suggested is the disinclination to accept the facts of experience which do not accord with our wishes. If indeed this is a

fault ; for it is partly at least the reverse side of the virile resolution to overcome evil, a resolution which finds vent in impatience that there should be evil to overcome. Partly it is, however, mere indignation at disagreeableness, and imputation of the wrong to God, the spirit of the little boy who angrily asks, Why did God make nettles ? when his bare legs are stung by them. Partly, again, it has its fairer side in the shame we feel at our own weakness, and in pity for the weakness or distress of others. But I am speaking of the temper which makes the presence of evil an insoluble problem, and this is the temper which believes that there must be something amiss or else inscrutably right in a world which is so full of pain and bad will. The facts of experience are that we are children of the very nature which sometimes overwhelms us, and are suckled at her breasts ; that the permanent and adapted forms of life are discovered by experiment accompanied by prodigal loss ; that goodness itself is the issue of such experimentation made to discover what form of social adjustment is best able to satisfy our wants under the helps and hindrances of our non-human surroundings. We cannot say that it is good or bad that it should be so ; we can only accept.<sup>1</sup> Such acceptance of fact is not the same thing as practical acquiescence. On the contrary the intellectual acquiescence is the incentive to the practical effort for amelioration, in accordance with our impulse to mould things to the heart's desire. And if it is not submissive resignation to an inscrutable will, neither is it the belief that evil is created in order to brace our spirits to exertion. There is no overruling and pre-existing purpose in the world upon which we should throw the blame for what we cannot help, or which we need thank for its subtle device of helping us by pain, still less of selecting a few who should profit by the pain of others and feel their own happiness enlarged thereby, as the blessed are said to feel in Augustine's heaven. The temper of acquiescence is at the same

<sup>1</sup> Cp., again, Meredith's poem, 'Outer and Inner' in *A Reading of Earth*.

time the temper which impels to amelioration without the fond expectation that the springs of pain will ever be sealed ; and when it takes in the relation of God to the world, it prompts the recognition that this same attempt at betterment is at once implanted in us by the Space-Time out of which we are precipitated, and secures the deity to which the world is tending.

I may as well introduce here what few remarks I can make on the subject of immortality, which for some reason appears always to be considered an eminent interest in religion. For here too we seem to have prejudices of theory and temper. The subject is not easy to handle, for no one would care to wound the sentiment of longing to rejoin in a future life our companions in this life. "If our ideals," says Wm. James,<sup>1</sup> "are only cared for in 'eternity' I do not see why we might not be willing to resign their care to other hands than ours." The mere desire that we feel to be present ourselves and continue our work begun here, admirable as it is, because the passion to do things ourselves is at the root of all our endeavours, cannot overrule the facts of our apparent limitation to the time and place of our bodily life. The data do not allow us to suppose, so far as we have seen, that our minds, even if we believe that they only use the body as an instrument, do exist without the instrument, and we are certainly not entitled because of our desire of a continued existence (possessed by different persons in very different degrees of strength, and by some not at all) to influence our metaphysics of mind, so as to support a thesis which would lend itself to that wish. For that wish of continued existence may be replaced, and perhaps with greater humanity, by resigning our work to others, as we are accustomed to do here, when the occasion demands.

Wish for a future life is not on the same footing as the sentiment of religion ; for there the object of the sentiment could be traced in the actual experienced world in its solicitation of the mind. But the future

<sup>1</sup> *Varieties*, p. 524.

life cannot be known from experience unless the continued existence of our minds after death can be established experimentally. Failing such demonstration, we do no injustice to this desire if we suppose it to be, like so much of our more definite religious beliefs, an attempt to convey something else in a form more obvious to our minds. Accordingly it may be a more personal and egotistic way of expressing the continuance of our work by others in a tradition of effort. Such tradition of an enterprise through many generations is accredited by experience. The personal continuance of our lives beyond the life of our bodies is fully accredited by none. Pending the experimental evidence I cannot but think that not only must we acquiesce in what we know and find our account therein as we well can do, but also we are bound to scrutinise the evidence presented to us with more than ordinary rigour, and not rather to accept it with more than ordinary welcome because it happens to accord with a wish. I can only repeat what I have said before, that should the extension of mind beyond the limits of the bodily life be verified, so that a mind can either act without a body or may shift its place to some other body and yet retain its memory, the larger part of the present speculation will have to be seriously modified or abandoned.

With this temper of belief there goes in this question a certain theoretical prejudice which is I think erroneous. The conservation of value might be understood to mean the persistence of myself because my life is valuable or a value. But to hold this seriously would be to be misled by a phrase and to neglect experience. For values arise in the contest of types and are established among finites by inheritance and tradition. They are exhibited in individuals, for types are always so embodied. Thus the conservation of value is attained in fact, not through persistence of one valuable individual but, as James puts it, through conservation of his ideal. If we are to follow the clue of experience, we must therefore believe that theoretically the claim for the future life is founded on error. We must content ourselves with the continuance

of species rather than of persons, and I must add that to me at least this limitation of desire seems not only imposed on us by such knowledge as we have, but is practically a higher object of desire. And if mere continuance of human ideals does not satisfy us, for nature may involve the physical destruction of mind, there is the other and higher satisfaction of thinking that the persistence of our human effort in tradition is doing the work of preparing deity, according to the well-justified phrase, *in God's good time* and, it must be added, *place*.

There is an old question<sup>1</sup> whether God suffers pain or is on the contrary completely happy. It sounds at first as remote as some of the metaphysical puzzles of the schoolmen which are so often held up to ridicule. Yet it is not without real significance, and the answer, which is on the same lines as that to the question of God's goodness, helps to make clearer the position that God, regarded as the infinite ideal, is of the same structure, body and mind, as we and all existents and Space-Time itself. Pain exists in the body of God as moral evil does, that is, in so far as God includes within his body the creatures which suffer pain, with whom for whatever reason there is defect or hindrance in the performance of their functions. But in God's deity there is no pain, nor anything corresponding to it. Neither is there pleasure, if pleasure means the feeling of agreeableness which we have when our work goes on without let or hindrance.

We saw reason to believe that pleasure and pain belong to the organic order in the case of ourselves; they are not modifications of consciousness but are vital conditions which we contemplate or are conscious of, much in the same way as we are conscious of hunger. Still less does pleasure or pain belong to deity in its character of deity. On the other hand, as life is to mind so is mind to deity, and deity is equivalent to some complex of mental activities. Deity might be supposed

<sup>1</sup> It is raised of the Absolute and discussed by Mr. Bradley in *Appearance and Reality*, ch. xxvii. pp. 533-5; also ch. xiv. pp. 157-8.

then to possess something analogous to our consciousness of pleasure or pain which we call feeling, in so far as deising is or is not subject to let or hindrance in its goings on. The first alternative cannot be adopted. We may therefore adopt the Aristotelian saying that God enjoys continuous pleasure. Such pleasure is comparable to the pleasures of sight and smell, if Plato is right in calling them pure or unmixed pleasures because they are not a relief from pain; but it is so doubtful whether pleasure would be so felt if there were no antecedent craving for them, as when the eyes have been in darkness, that the comparison is merely a help and nothing more.

Difference  
of God and  
finites in  
respect of  
feeling.

The reason of this difference between God and ourselves is the old one that God's deity is infinite as well as his body, though it is lodged only in a portion of that body. Now painfulness (and pleasantness as well in the way in which we experience it) means finitude. The obstruction may arise from without or it may arise from within the body or the mind. But what makes pain is the threat to the destruction of our pattern of existence, to the retention of the equilibrium required by the maintenance of our organic or individual character. To an infinite being there can be no such menace. There is no form which it has to maintain in the face of other beings. The conditions do not here exist upon which painfulness and pleasantness depend.

In his work on ethics, von Hartmann spoke of man's goodness as a co-operation of man with God, whereby man helps to assuage God's suffering.<sup>1</sup> This conception is based on the pessimistic dogma that pain is positive and pleasure merely negative relief from pain. I do not mention his saying here for that reason, in order to point out by the way how contradictory to fact is the conclusion of pessimism that non-existence is preferable to existence. For it makes choice, which is directed to securing permanent existence and therefore to what brings pleasure, choose annihilation of pleasure, and impermanent existence. What experience informs us

<sup>1</sup> *Phänomenologie des sittlichen Bewusstseins* (Berlin, 1879), last chapter, esp. pp. 868 ff.

is, not that there is more pleasure than pain or more pain than pleasure in the world, but only that according to the way of the world those kinds of being persist with an overplus of pleasure who, working out their type of life, are so endowed as to maintain themselves; and this choice is not primarily determined by pleasure and pain but by the objects which satisfy the active needs of a being according to its kind. I mention the saying for two other reasons. First to express my own obligation to it for the truth which I learnt from it more clearly than elsewhere, that man does not merely serve God but helps him and therefore, as I add, in the measure of his smallness, creates deity. The other reason was more relevant to my immediate purpose. In making virtue a process of relieving God's pain, it committed the error of anthropomorphising God's deity. God is not finite that he should feel pain or pleasure. It is only when deity emerges in finite beings, finite gods or angels, that something which corresponds to pain and pleasure in our experience of them exists. Finite deities would be aware of pleasures and pains in their bodies, like the rebel angels in *Paradise Lost*, but also their deity would be aware of the defects and smoothness of the working of their mental substructure, and this would be felt by them as something analogous to our pains and pleasures, though what form it would take for them cannot be known, since deity and deising are on a level above consciousness and we cannot tell what kind of an object the smooth or hindered operation of mental elements would assume for them.

We are brought back again to the point from which we started, that deity is a quality different from spirit, while it owes its existence to the travail of a world which has reached the level of spirit. It followed from this that deity was subject, so long as it is the infinite deity of God, to no distinction of evil and good or of any other values. It depends on values and is in the line of what is good, but is itself a perfection not contrasted with imperfection. Values are secured by the beings which think in their language. There is a saying of Matthew Arnold that God is the eternal not-ourselves which makes

Summary.



for righteousness. It brings God down to the level of man. If the power which makes for righteousness is not ourselves, there is no other power which makes for righteousness. God is, if we may use such language, the power which makes for deity. It is because we ourselves make for righteousness that we have faith in this further nisus of the universe, and are sustained by that sentiment so as to derive help from it in doing righteousness. Our minds and the values they create do not end the series of empirical qualities. Our virtue is only part of the presupposition on which depends the emergence of the next higher quality to mind which we call deity.

A brief  
index.

I have no intention of recapitulating the long argument of this book. But I will conclude with a few propositions which supply a brief index to the whole. They are the following :

Space and Time have no reality apart from each other, but are aspects or attributes of one reality, Space-Time or Motion. This is the stuff of which all existents are composed ; and it breaks up of itself into these complexes within the one all-embracing stuff. Any portion of it, any space-time, possesses certain fundamental features which therefore belong to every existent generated within the universe of Space-Time. These fundamental pervasive features of things are the categories. Besides these fundamental features, things possess quality which is the empirical feature of things. Qualities form a hierarchy, the quality of each level of existence being identical with a certain complexity or collocation of elements on the next lower level. The quality performs to its equivalent lower existence the office which mind performs to its neural basis. Mind and body do but exemplify, therefore, a relation which holds universally. Accordingly Time is the mind of Space and any quality the mind of its body ; or to speak more accurately, mind and any other quality are the different distinctive complexities of Time which exist as qualities. As existents within Space-Time, minds enter into various

relations of a perfectly general character with other things and with one another. These account for the familiar features of mental life : knowing, freedom, values, and the like. In the hierarchy of qualities the next higher quality to the highest attained is deity. God is the whole universe engaged in process towards the emergence of this new quality, and religion is the sentiment in us that we are drawn towards him, and caught in the movement of the world to a higher level of existence.

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